RISHI KUMAR MISHRA

THE COSMIC MATRIX

IN THE LIGHT OF THE VEDAS

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Parambayai namah
Shri Ganadhipataye namah
Acharya charan Kamalebhyo Namah

Continuing the timeless tradition of Maharshi Bharadwaj,
the author dedicates this work to

PANDIT MADHUSUDAN OJHA

for rescuing the ancient insights of
the seer-scientists from the rubble
of ignorance and misinterpretation

and

his great disciple and the author's teacher,

PANDIT MOTILAL SHASTRI

ajnan timarndhasya jnanjan shalakaya
chakshurunmeeltam yen tasmai shri guruvai namah

Blinded as I was in the deep darkness of ignorance,
He who opened my eyes with the
Fine collyrium stick of knowledge —
To him, my teacher, I bow in deep reverence.

Phalguna Shukla Purnima
Vikram Samvat 2057
(March 11, 2001)

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TO THE READERS

We know very little, and yet it is astonishing that we know so much, and still more astonishing that so little knowledge can give us so much power.

Bertrand Russell, *The ABC of Relativity*

As our readers begin to go through this work, they will do well to keep in mind the following advice given by Bertrand Russell, the great protagonist of reason, logic and modern science:

What is demanded is a change in our imaginative picture of the world — a picture which has been handed down from remote, perhaps pre-human, ancestors, and has been learned by each one of us in early childhood. A change in our imagination is always difficult, especially when we are no longer young. The same sort of change was demanded by Copernicus, who taught that the earth is not stationary and the heavens do not revolve about it once a day. To us now there is no difficulty in this idea, because we learned it before our mental habits had become fixed.

The ABC of Relativity

The author also requests readers to bear in mind the following words of Einstein, as written in the Preface to his work, ***Relativity*** (1916):

In the interest of clearness, it appeared to me inevitable that I should repeat myself frequently, without paying attention to the elegance of the presentation. I adhere scrupulously to the precept of that brilliant theoretical physicist L. Boltzmann, according to whom matters of elegance ought to be left to the tailor and to the cobbler.

ACKNOWLEDGEMENTS

Is it merely a matter of coincidence that the city of Jaipur has become the centre of renewal of the lost insights of the *Vedas*, and the resurgence — albeit feeble and halting — of the study of *vijnana* in the *Vedas*? At one point Jaipur was hailed as the second Kashi (Varanasi), the greatest seat of traditional scholarship and learning in this country. It appears that Jaipur is continuing to endeavour to ensure that the flame of this tradition is not extinguished, despite powerful adverse currents.

There is something remarkable about this city. Pandit Madhusudan Ojha was born in a remote village in Bihar but was drawn to Jaipur, which became the centre of his efforts to rescue, revive and resurrect the knowledge buried deep under the debris of ignorance and indifference for the past several centuries. The author of this work was born in Punjab and educated in Calcutta and Patna. By an inexplicable turn of events he was then drawn to Jaipur, where he had the good fortune of meeting Pandit Motilal Shastri and receiving from him the insights that he shares with readers in this work. Maharaj Ji himself, of course, belonged to Jaipur. For all these reasons, the author would like to express a deep sense of gratitude to the city of Jaipur.

Of the several impulses Maharaj Ji wished the author to keep firmly in check, resisting the temptation of popular endorsement and approval had a high priority. Therefore, the author has endeavoured to pursue his studies and work as quietly as possible, avoiding any public function to mark the publication of his earlier work, *Before the Beginning and After the End*. However, when Shri R. K. Mehra of Rupa & Co.

suggested that the first paperback edition of the book be released at a function in Jaipur, the author agreed. This was to acknowledge Jaipur's contribution to the historic revival of these insights, and to pay homage to his guru and his teacher in the city where they lit the lamp of this knowledge.

The author wishes to express his deep appreciation of the professionalism and excellence with which Mr. Mehra and Rupa have handled the publication of the earlier work, and their unflagging enthusiasm in fostering the dissemination of this valuable knowledge through this publication. The author hopes that the association between Brahma Vidya Kendra and Rupa will continue to bring to light further treasures from this vast storehouse of ancient insights.

Shri Baljit Kapoor has been meticulous in co-ordinating the publication with Rupa and Co., and the author wishes to thank him for his interest and co-operation.

Rajnish Kumar Mishra, a thoughtful scholar at Jawaharlal Nehru University, has been a valuable additions to the team in helping to make this work 'reader-friendly'. Rajnish offered to read all the chapters in their draft stage, gave useful suggestions, enriched the Glossary by adding diacritical marks, and prepared the section containing original Sanskrit mantras and verses and their transliteration in Roman script. Santosh Kumar Shukla, Head of the Meemamsa Department of Lal Bahadur Shastri Sanskrit Vidyapeetha, helped to locate original references in various classical texts, including the *Vedas* and *Upanishads*. The author wishes to place on record his appreciation of their labour of love and devotion to the cause of the propagation of Sanskrit and the study of the *Vedas* and various traditions of Bharatavarsha.

The cover design of *Before the Beginning and After the End* was widely acclaimed as a beautiful addition to the publication. For purely personal reasons, the creator of that striking design chooses to remain anonymous for the time being. Some day the author hopes to be able to publicly acknowledge this creator.

Vyvyan Cayley is a vital partner in this project. To acknowledge her invaluable support and assistance appears to be a needless formality.

The author belongs to the lineage of Maharshi Bharadwaj (one of the earliest of the rishis), as did his teacher and guru, Pandit Motilal Shastri. This is an appropriate occasion upon which to acknowledge to that great seer-scientist, with deep reverence, the gratitude of all those who have followed him. Allowing for all its limitations, this work seeks to continue that tradition.

AUTHOR'S NOTE ON TRANSLITERATION AND PRONUNCIATION

We have chosen to adopt a simplified system of transliteration for the Sanskrit words and terms found in the body of this book, in order not to distract our readers' attention from the meaning of the phrase, line or paragraph containing these words and terms. However, for the sake of students of Sanskrit and of linguistics, we have included a rendering of original verses from the *Vedas* in the Devanagari script (in Appendix One) as well as diacritics in the terms supplied in the Glossary.

Some simple rules of grammar and pronunciation should be noted at the outset. In some instances, according to the rules of *sandhi*, letters are altered when written together. A clear example is found in the titles of some *Upanishads*; for instance, *Kena* + *Upanishad* becomes *Kenopanishad*.

It is extremely common in this book to find the letter 'a' at the end of a word. Examples are legion and include *Krishna*, *Parmeshwara* and *atma*. In actual fact, when these words are spoken there is "almost" an 'a' at the end, but one which is half-uttered and not as overt as the English 'a'. The alternative would have been to write these words as *Krishn*, *Parmeshwar,* *atm* and suchlike, which we felt would look unusual to the eyes of someone whose first language is English or another European language and would therefore also be an unwelcome distraction.

Most vowels in Sanskrit have an open pronunciation. Thus, we find that the 'o' in the word *yoga* is pronounced like the

'o' in the English word 'flow', not like the short 'o' in 'dog'. Similarly, the long 'i' in *Ishwara* is akin to the 'i' in 'oblique' rather than the 'i' in 'die'. The short 'i' in *rik* is pronounced like the 'i' in 'chin'.

There is no 'th' in Sanskrit, so that when readers see 'th' in a Sanskrit word in these pages they should be aware that this is an aspirated 't'. For example, in the word *Katha*, the 'th' is pronounced like the 'th' in 'hot-house' (*Kat-ha*), not like the 'th' in 'truth'. In the same way, all other consonants combined with an aspirated 'h' — bh, ch, dh, gh, jh, kh and ph — are pronounced with a distinct 'h' following the initial consonant. For instance, *adhyatma* is pronounced *ad-hyatma*.

Readers should note, however, that the situation is otherwise for the combinations of 'ch' and 'sh' as represented in this work. The letters 'ch' in this text may be a substitute for a 'c' which would normally carry a diacritic mark over the letter itself (as in *citta* which becomes *chitta*); or they may refer to the Sanskrit spelling of 'ch' as in *Chhandogya Upanishad*. In both cases, they are to be pronounced 'ch' as in the word 'church'. The spelling 'sh' is a romanised transliteration of 's' which would normally carry a diacritic mark above it, in instances such as *Śiva* and *śāstra* (which become *Shiva* and *shastra*) and many others.

The style adopted in this work is to italicise the first mention of each Sanskrit term, which is given in roman type thereafter.

PRONUNCIATION GUIDE FOR SANSKRIT WORDS USED IN THE TEXT

A	AS *O* IN SON
AE	AS *AI* IN MAIN
AI	AS *A* IN FALLACY
AU	AS *OW* IN NOW
B	AS *B* IN BOOK
BH	AS *BH* IN ABHOR
CH	AS *CH* IN CHECK
D	AS *D* IN DO
DH	AS *THE* IN BREATHE
E	AS *A* IN EVADE
EE	AS *EE* IN FEEL
H	AS *H* IN HARD
I	AS *I* IN IF
J	AS *J* IN JAR
JH	AS *DGEH* IN HEDGEHOG
K	AS *K* IN KITE
KH	AS *KH* IN KHAKI
L	AS *L* IN LORD

M	AS *M* IN MAN
M	AS *M* IN SIMPLE, HUM
N	AS *N* IN NOSE
N	AS *N* IN LUNCH
O	AS *O* IN OVER
OO	AS *OO* IN BOOT
P	AS *P* IN PUT
PH	AS *PH* IN PHOTO
R	AS *R* IN RUN
S	AS *S* IN SIT
SH	AS *SH* IN SHOW
T	AS *T* IN TOKEN
TH	AS *TH* IN THUMB
U	AS *U* IN FULL
V	AS *V* IN AVERT
W	AS *W* IN WANT
Y	AS *Y* IN YAK

Na aham manye sarvedati no na vedati veda cha
Yo na nastad veda tad veda no na vedati veda cha

KENOPANISHAD 2:2

I do not think I know well enough.
Not that I do know and I do not know as well.
(S)he among us who understands the principle that
"[It is] not that I do not know; I know and I do
not know as well" knows that (complexity,
uncertainty and subtlety of the science of creation).

PREFACE

That which we read and study shapes our mind, constructs the framework of our thoughts, regulates the process of absorption of new knowledge, becomes a part of our personality and self-image. It becomes a powerful factor in our ego. More often than not, therefore, new insights and ideas meet with considerable resistance and are either physically suppressed or killed by negation — that is, the refusal to acknowledge their existence. When an idea refuses to die, it is labelled and consigned to a coroner.

Scientists often dismiss an idea as 'mythology' because the message in the narrative does not fit into their thought structure. Thoughts labelled as 'speculation' or 'philosophical conjecture' are consigned to a dark corner in the storehouse of human knowledge. Powerful vested interests, be they commercial, political or theological, often lie behind such obstinate refusal to reckon with new ideas and insights.

The Cosmic Matrix does not seek to present 'novel' ideas, but rather very ancient ideas which are, say, more than 6000 years old. The ideas presented in this work are only new in the sense that they were liberated from the dark recesses of human knowledge — to which they had been consigned several millennia ago — and brought to light by the late Pandit Madhusudan Ojha. His disciple Pandit Motilal Shastri, from whom this author had the privilege to learn aspects of this vast storehouse of Vedic knowledge, carried forward the dissemination of his discoveries which were scattered in the *Vedas* and allied texts.

This storehouse contains an explanation of the processes by which everything comes into being from nothing. Vijnana is the method of knowing how one becomes many, the evolution of all numbers from zero. In this work we use some 'modern' scientific terms, but these are to be seen as distinct from the 'science' of vijnana, which is the continuous and eternal knowledge of all creation.

This work examines the process of creation and dissolution of the universe in the light of the *Vedas*, the oldest record of the insights and intellectual attainments of human history. It explains how the cosmos comes into being, according to the rishis or seer-scientists who discerned the secrets of nature 6000 to 10,000 years ago. It illustrates their methodology of exploration, investigation and application of the forces which propel and regulate various natural phenomena. This methodology does not consist of superstitious rituals; to the extent that it is verifiable by its applicability in various walks of life, it is 'scientific' in the sense in which we understand it today. However, this work also explains how vijnana — a term translated as 'science' — differs from modern science.

In a chapter entitled "Veda and the Material Sciences" we discuss the issues arising from the use of the term 'science' for vijnana. We use the term 'modern science' for science as it is understood in the current global context. There is a growing recognition among scholars of the limitations of this modern science. Some realise that "science, as it exists now, is the activity of only one part of the whole mind, the conductor of only one force, and humanity cannot live by one force alone... We must think with the whole mind or we will disappear, perhaps taking the possibilities of our planet with us."[1] The ever-increasing flood of observations and

information about nature which science is providing only seems to show us that we have not understood — and perhaps cannot even imagine a day when we will understand — the whole. So we may be ready to admit the possibility that the nature of understanding itself has eluded us.

Reflecting on this state of affairs, sensitive observers feel that "[If] the efforts of minds like Newton, Galileo and Einstein have not led modern man in the direction of understanding the whole, then surely there is something about knowledge itself that we have all lost sight of."[2] Fritjof Capra's *The Tao of Physics*, among others, has greatly assisted public recognition of the one-sidedness of modern science. This realisation has been growing rapidly for some years, alongside a movement for the convergence of science and spiritual metaphysics. There are signs of a metaphysical rebellion even among scientists themselves.

However, *The Cosmic Matrix* does not attempt to blend 'science' with 'spirituality', for the simple reason that the rishis or seer-scientists do not divorce matter from spirit. In fact, they emphasise the inexorable integrity of the various dimensions of a person — what we think of as the 'I' — by identifying four aspects of an individual and revealing the nature of their indivisible bond. These aspects include the body, which is our first introduction to an individual; the mind, wherein the individual celebrates joy and experiences sorrow; and the intellect, which highlights various components of an issue, accepts and rejects a proposition and takes decisions. All these are not separate but are the different dimensions of an integrated, single whole. The substratum for these three, which we may call the fourth dimension, is *atma* — often erroneously translated as 'spirit'.

Modern science views an entity or an individual as machinery. To know it entails dividing it into its parts and then identifying and analysing each part down to its minutest atom, proton, neutron or particle. There is a common assumption that modern science deals with matter, which makes the body, and that the 'spirit' is something in conflict with matter.

The seer-scientists never engage in such a splintered understanding but instead guide us towards a comprehension of the whole. This enables us to realise that the internalisation of this 'wholeness' leads to an experience of *ananda* (unalloyed joy). Acquiring this knowledge, however, is beset by several obstacles, principal among which is the widespread ignorance of the profound scientific messages contained in the *Vedas*. Over the centuries this wisdom has remained shrouded in darkness due to the increasing paucity of scholars with adequate academic and technical training to understand *veda*. A declining commitment to the sustained study of the main subjects covered in these rich texts has aggravated the situation and deepened this darkness.

The Cosmic Matrix introduces its readers to the corpus of texts known as the four *Vedas* and their auxiliary branches. It also explains *veda tattwa*, the phenomenon which pervades nature. The difference between the books of the *Vedas* and the phenomenon explained by these texts is crucial to an understanding of the formulations recorded by the seer-scientists in the texts. This work is not a commentary on these ancient texts, which have been gathered together in the four *Vedas* of *Rik Veda*, *Yajur Veda*, *Sama Veda* and *Atharva Veda*. Rather, it is an effort to understand and explain — for the first time in English, the dominant language of modern times — the forgotten insights of this ancient wealth of knowledge.

The *Vedas* are the oldest repository of humankind's understanding of the mysteries of the universe and house several branches of enquiry, investigation and application of its principles. In one sense, *Before the Beginning and After the End* — the author's previous work — prepares readers to delve into the various disciplines of Vedic knowledge. This work is a continuation of that study, leading its readers deeper into the message and meaning of the *Vedas*. It seeks to transport them to a different plane and take them straight to the heart of that knowledge. In its essence, this is a work of veda and vijnana, the latter being the 'sciences' contained therein. Because 'science' is a study of everything, in that sense the *Vedas* provide us with insights into the fundamental principles and factors which shape and regulate the cosmos and everything it comprises.

The *Vedas* comprise *mantra* as well as *Brahmana* portions,[3] and the *Rik, Yajur*, *Sama* and *Atharva Vedas* are known as the four *Samhitas*, a term meaning 'compilation' or 'compendium'. Thus, these four form a compilation of mantras, and each is divided into several branches. *Rik Veda* has 21 branches, *Yajur Veda* has 101, *Sama Veda* has 1001 and *Atharva Veda* has nine. Thus the *Samhita* portion has 1132 branches in all. Each *Samhita* has an accompanying equal number of *Brahmana*,[4] *Aranyaka* and *Upanishad* texts.

Many of these texts have been lost owing to a combination of factors: the passage of time, plundering by invaders, social chaos, and hostile political regimes. The colossal ignorance of the scientific insights of veda has been caused, to a great extent, by the neglect of the study of the *Brahmana* texts. These are an integral part of the *Vedas* and have a special importance: while the original mantras of *Samhita* enunciate

the principles of vijnana and articulate the seer-scientists' theoretical propositions, the *Brahmana* texts provide a detailed elaboration of these theories and principles.

Modern scientists claim the superiority of the 'scientific' method over other forms of pursuit of the truth on the grounds that they test their hypotheses by experimentation and real-life application; and they dismiss other forms of knowledge as unverifiable and speculative. This attitude reflects the arrogance of the one-sided mind, and is yet another example of ignorance of forms of enquiry different from those of modern science. In so doing, it denies other methods which could lead to the discovery of Reality. A proper study of the *Brahmana* texts reveals that the rishis — who 'saw' the truth directly — validated their vijnana or scientific discoveries through experimentation and developed numerous forms of real-life applications of these principles, which they popularised extensively.

With the passage of time this wholistic knowledge became splintered into 'specialisations', and the texts themselves were divided into several branches and sub-branches. It became increasingly difficult to comprehend Vedic knowledge in its totality since valuable and relevant books containing instructions about these experiments and their applications were destroyed or taken to foreign lands. Later, colonial rulers encouraged study of these ancient texts mainly to serve their own objectives, and thereby the whole tradition of learning, storing, communicating and applying the principles of vijnana was completely derailed. Over time the emphasis shifted towards a fragmentary understanding of integrated reality in which the parts became more important than the whole.

For several centuries, Western civilisation has operated under the assumption that mankind can understand the universe without understanding itself; whereas an understanding of the *Vedas* and the views of the seer-scientists makes us aware that the microcosm is a mere reflection of the macrocosm. If we understand the microcosm, therefore, we will understand the macrocosm. The processes of the cosmos are replicated in the individual, so that by truly knowing an individual one can comprehend the universe. The term 'self-realisation' succinctly conveys this principle. By realising the Self, one can realise or grasp all that is worth knowing in the universe. According to the rishis, "I am *Brahma*",[5] the source of the universe. If one is able to know the 'I', one gains knowledge of the cosmos. As the readers of this work will discover, the *Vedas* put forward the proposition that Brahma is the fundamental factor which expands, grows and evolves into the cosmos. Brahma is the unified principle that functions as the substratum of all the diverse and variegated individuals and entities which constitute the cosmos.

Before this unified principle was 'discovered' by the seer-scientists and articulated in the *Veda Mantras*, scholars of the pre-Vedic age had formulated 10 theories of the universe which find mention in *The Cosmic Matrix* and are listed in the *Nasadeeya Sukta* of the *Rik Veda*. Brahma, the creator of the vedas, resolved the differences inherent in those theories and unified them into a single principle. An examination of the 10 pre-Vedic theories of the universe is a subject deserving detailed study, but one which is beyond our scope in this work. Rather, we seek to focus on the study of the subject in the light of the principles enunciated in the Vedic texts.

The Western negation of the concepts of the origins of the universe contained in the *Vedas* is an interesting indicator of

the modern scientific mind. Milton K. Munitz, for example, chose to ignore the existence of these cosmological concepts in his seminal work, *Theories of the Universe*. He does not even include them in the section "First Steps in Cosmological Speculation", where he makes reference to 'Babylonian Genesis' and 'Ionian Cosmogony' (which dates to 1800 – 2000 BC), but not to the *Nasadeeya Sukta* of the *Rik Veda*, which by all accounts dates back to 4000 – 6000 BC.[6] His assumption that "cosmological speculation when it first makes its appearance at the dawn of intellectual history takes the form of myth" may be applicable to the Babylonian, Ionian or Pythagorean doctrines. But what Western scholars have dismissed as 'myths' in the *Vedas* and *Puranas* are in actuality profound metaphors pregnant with deep insights.

Those who understand the meaning of the terms used by the seer-scientists and their style of communication have access to dazzling vistas of knowledge about the processes of creation. The seeker-student comes to know about the emergence of the cosmos, the forces which regulate nature, various forms of energies and their transformation into matter, and the matrix of relationships between nature and human beings. Even if Western scholars are not ready to accept that the Vedic concepts have a 'scientific' basis, the least they should do is not exclude them from the 'theories' or 'myths' about the universe. For to do so is to deny a serious student of the history of cosmology access to these ancient insights. Yet this is precisely what they have done.

The limitations of modern science flow from the essentially splintered manner in which it deals with Reality. There is a growing realisation that physics, for instance, limits its perception of process to physical movement in space and time.

Chemistry sees process in terms of changes of attributes in the reaction patterns of known substances. Biology sees process in another way, and the sciences of human behaviour see it in yet another way. One major obstacle we encounter here is the problem of communicating the complex and sophisticated concepts of the seer-scientists in a language (English) which is not equipped for that purpose. In Sanskrit, words are a living entity; every word grows from a root, just as a seed sprouts and then grows into a tree. One root evolves into numerous words with various nuances. Different messages are embedded in it, not in a chaotic or arbitrary manner but in accordance with rigorous rules. Contemporary expressions often suffer "lack of a language which can refer to the reality, rather than only to one or another aspect of it."[7]

The Western mind has also failed to grasp the profound messages of the seer-scientists because of "certain ingrained prejudices that are part of the common inheritance from the 'Renaissance', with its adulation of the Graeco-Roman culture and its compensating depreciation, both deliberate and instinctive, of other civilizations," and "attempts to read into them, or to graft onto them, modern Western conceptions, from a variety of motives."[8] The seer-scientists grappled creatively with the inadequacy of language as a tool of communication, devising many alternatives to compensate for it. To capture a dynamic, multi-dimensional reality is a daunting task. The use of images and idols — denounced by modern scholars as 'idolatry' and denigrated by rationalists as 'superstition' — are very often the only effective vehicle through which to capture different and frequently conflicting traits and functions in a single expression. For example, even the best communicator would be challenged by the task of expressing the idea of absolute control over energies which

have achieved total harmony and tranquillity in the midst of the turmoil, turbulence, apprehensions and dangers pervading the entire cosmos, and which are bereft of any specific qualities. The seer-scientists, however, have blended all these diverse messages into the portrayal of a single individual in the image of *Vishnu*.[9]

Unfortunately, scholars of Bharatavarsha, the land where the seer-scientists unveiled the profound messages of the *Vedas*, have also become victims of the distortions and misinterpretations of Western scholarship. Some perceptive Western observers have noted that present-day Indians suffer from an elaborately organised ignorance which goes by the name of a 'modern education'. "Their powers of discernment [have been] so disastrously upset that they seem no longer capable of receiving ideas through the medium of their own language; and their readiness to swallow quite uncritically the most hazardous hypotheses, even those relating to their own traditional doctrines, provided they have been put forward by some European sociologist or philosopher, is evidence of a state of mind that can only be described as defeatist."[10]

This distressing situation is a result of ignorance as well as deliberate misinterpretation wrought by political and cultural domination. Our study of the *Vedas*, therefore, must begin by cleaning our mind of the dust and dirt piled onto it over several centuries. An earnest student need not be intimidated by this situation. In fact, the study of the *Vedas* becomes a joyful experience if one approaches the task with sincerity and humility. One has to resist the tendency to fit new knowledge into the framework of old mental attitudes, but rather one must change these attitudes to accommodate new realities. For someone who has seen only birds fly, an aeroplane is also

looked upon as a bird. But once that person has looked more closely or flown in an aircraft, her or his mind internalises the new reality.

Physics deals with the world of energy, while the *Vedas* deal with supraphysical energy. The supraphysical universe is a universe of ultra-subtle entities, which should not be difficult for the modern mind to comprehend. Quantum mechanics deals with the world of ultra-small molecules and atoms, and of subatomic particles such as protons, neutrons and electrons which are too minute to be seen by the naked eye. The magnitude of the subtlety of these ultra-subtle entities can be guessed if we imagine that some kind of being equipped with a pair of magic tweezers begins to pick individual atoms out of a lump of coal at the rate of one million atoms every second. Even at this fantastic speed, it would still take some 10 to 15 billion years to remove all the atoms from the little piece of coal. We require a creative imagination to begin our exploration of the supraphysical universe. Once we enter it, we begin to 'see' the entities at play and the processes at work in that world.

A living being is one who is capable of making an effort and who has the ability to experience. The life-force in every living being is *prana*, which is why each being is known as *pranee*. This force is not visible, but it can be discerned or visualised through its functions and effects. A body bereft of prana is incapable of making an effort or having an experience — in other words, it is a corpse. An 'effort', in its classical sense in Vedic culture, is an activity which involves rejection of something harmful and doing something beneficial. Thus, in essence, all living beings display two symptoms: *jnana* (awareness or knowledge) and *karma* (effort).

Experience and action distinguish living beings from the dead. It is reasonable to suggest that the source from which all living beings evolve must be an aggregate of jnana and karma — knowledge and action — because a living being is a fusion of these two impulses. Proceeding from this basic premise, this work examines the nature of the presence of 'consciousness' or 'awareness' in individuals other than human beings, including such 'lifeless' individuals as the earth, in addition to animals, birds, insects and so forth.

We examine the concept of the faculty of 'consciousness' in its manifest, semi-manifest and unmanifest states. In fact, the seer-scientists do not classify various individuals in the cosmos as having or not having consciousness. Rather, they categorise them as having or not having *indriyas* (sense organs). The earth is without any 'organ'. Although life pervades everywhere, organs may or may not be present in an individual. We also briefly explain the cause–effect relationship as enunciated in the *darshana* tradition of Bharatavarsha, which leads readers to discover the inexorably intertwined relationship of existence and consciousness. Or, to put it another way, the fact that an entity exists and that our knowledge knows that this is so are inexorably intertwined.

The journey into the realm of vijnana or the Vedic sciences is like flying in an aircraft. If you wish to catch a plane, first you must travel on the ground to reach the airport, then board the plane; the engine is started up, the plane takes off and after flying for a while you reach your destination. Similarly, to reach the destination of veda vijnana, we have to negotiate the twists and turns of darshana, and travel to the point of departure — the philosophical systems flowing from the *Vedas*. We must also acquaint ourselves with the material

sciences, because the modern mind relies on these external tools in its search for truth. For of a variety of reasons, which we need not go into here, the modern mind has chosen to deprive itself of other tools of knowing Reality, tools which reside within the individual and can be invoked and sharpened to achieve an extraordinarily high degree of effectiveness.

We have elected to traverse the route of philosophy briefly, in order to bring our readers to the point of departure for a sojourn in the realm of the Vedic sciences and to explore their perspective on creation and the cosmos as presented in this work. An unbiased understanding of the darshana enunciated by the scholars of the Vedic tradition is by no means easy; for until recently the 'modern' mind (an euphemism for the Western and Christian world view) firmly believed that Indians were incapable of having any philosophy. This bias is clearly reflected in Western writings, which blend laudatory references to the attainments of this civilisation with arrogant contempt for its insights. They acknowledge that: "Science and art flourished amongst these nations at an epoch when our most civilized countries of the West were still plunged in the dark abyss of ignorance. The various forms of their institutions, both political and social; their knowledge of mathematics, especially of astronomy; their systems of metaphysics and ethics: all these had long ago made the people of India famous far beyond their own borders; while the renown of Hindu philosophers had reached even Europe."[11] However, "the ancient history of their country is, for one thing, enshrouded in chimera and fable, and, unfortunately, such incoherence and such obscurity prevail in their written records."[12] Masking their inability to understand these written records, these 'scholars' dismissed them. Yet they are our only means of really getting at the Truth, so that such a dismissal

threatens to prevent us from ever succeeding in throwing proper light on all "this mass of absurdities". As the readers of this work will gradually discover, this jaundiced view does not emanate from the actual written materials of the scholars and seer-scientists, but stems from the prejudices of Western scholars who had a vested interest in 'studying' these ancient books. They tried to fit the concepts of the rishis into their own cultural, social, religious and physical frameworks, and proceeded to denounce all that defied their comprehension because it was different, complex and too profound to allow them to fathom the richness contained therein. Truth exists openly; it sparkles before the eyes of the earnest seeker, but eludes the perverse and prejudiced mind to whom it appears to be clothed in "such a grotesque garb as to render it a mere travesty from an historical point of view."[13]

The loyalty of these Western 'scholars' was unmistakably to the colonial power. Acting blatantly as its propagandists, they advertised that "this colossal dominion, which a European Government has succeeded in establishing in India without any very great difficulty, has filled the people of India with admiration, and has fully convinced the Powers of Asia of the great superiority of Europeans in every way."[14] Those who are aware of the sustained struggle of these subjugated peoples and their sufferings and sacrifices will, no doubt, dismiss such proclamations with the contempt they deserve.

These scholars also took recourse to various subterfuges for gaining the indigenous people's confidence. They "adopted their style of clothing and even went so far as to avoid any display of repugnance to the majority of their peculiar prejudice."[15] They clearly did not reckon with the ability of their targets to protect their treasures from this camouflaged

invasion. The victims could sense the motive behind such determined efforts, and realised that these evangelists were masquerading as scholars with the ultimate aim of painting a picture that "the wickedness and incongruities of polytheism and idolatry would by its very ugliness help greatly to set off the beauties and perfections of Christianity."[16]

The efforts of such pseudo-scholars met with frustrating resistance and lack of co-operation from the targeted victims. No wonder, then, that this led to the cry that "the time is still far distant when the stubborn Hindu will open his eyes to the light and tear himself away from his dark superstitions." But the machinations continued in the hope that "a day will come when the standard of the Cross will be flying over the temples of India as it flies now over her strong places." Of course, they were exasperated because "the mysteries of their religious cult; the records of their learning; the privacy of their homes: all these form barriers between themselves and their observers which it is almost impossible to pass."[17] To the extent that these barriers remained impregnable, the rich traditions of scholarship and the pursuit of Vedic knowledge were saved from total destruction and distortion. However, enough damage has been inflicted as to render the task of bringing the lost treasures to light extremely difficult.

Although the views cited above are obviously those of a single 'scholar', there is enough evidence to show that these reflect the attitudes of a fairly wide cross-section of Western Indologists and 'experts'. Their motivation for studying the *Vedas* and other ancient Sanskrit texts was the same, namely to spread Christianity and to work as tools of the imperial rule. So much 'work' has been done with this motive and in so organised a manner that a whole Indology industry has

proliferated; and powerful commercial, political and religious vested interests have grown to defend and sustain it. Therefore, one has to contend with the vehemence of their attacks and a conspiracy of negation against any attempt to project a different view. However, it is our belief that, in the ultimate analysis, Truth alone triumphs over all inquisitions and distortions. True knowledge cannot be suppressed indefinitely; the human impulse to engage in the pursuit of Truth is irrepressible. This work derives its strength from this conviction.

To return to our main theme, the texts of the *Vedas* deal with the four subjects of *yajnya,* vijnana, *itihas* and *stotra*. Yajnya is the application of the science of creation, while vijnana is its theoretical principles. Itihas deals with the incidents, episodes and narratives of people who played an important part in the social, political, intellectual and scientific domains during the period when the Vedic insights were discovered and recorded. Stotra is a form of homage to individuals, ideas, concepts, symbols and forces, to supraphysical entities and the human personages representing them.

Various traditional scholars have interpreted the word 'vijnana' differently. The author of *Amarkosha* (a lexicon of Sanskrit terms) describes vijnana as all knowledge except that which leads to emancipation, and includes in this definition skills, crafts and technology. In this work we follow Pandit Madhusudan Ojha's definition that jnana is the insight into the one common tattwa which pervades all the diverse entities that we discern; and vijnana is the knowledge of how that one fundamental tattwa transforms itself into the variegated diverse individuals which comprise the universe.

Pandit Madhusudan Ojha's explanation of the fundamental meaning of the profound mantras also met with resistance from traditional scholars. Although his approach followed the *shastras*, some critics complained that he interpreted them according to his own imagination. Such complaints and comments arose from uneasiness caused by the fact that the traditional scholars found Ojhaji's explanations to be new. Not because he had 'invented' them but because, with the passage of time, books explaining the logic of the fundamental principles of the *Vedas* have disappeared. (*Gopatha Brahmana* and *Chhandogya Upanishad* mention the *angas* (branches) of the *Vedas* which have been lost.) Hence, there is no way of knowing the fundamental vijnana.

The rishis created the *Brahmana* books with a focus on yajnya, and these are the heart of the *Vedas*. In the 20 chapters of the white *Yajur Veda Samhita*, the mantras are given in the order in which these are recited in yajnya. In the black *Yajur Samhita*, the mantras and *Brahmana* verses are mixed. Therefore, while the sequence can easily be detected in the white *Yajur Veda*, it is not so easy to discern in the black. The *Brahmana* texts are organised in the same order as the performance of yajnya. In *Shatpatha Brahmana*, for example, we find a very orderly arrangement. Every action of yajnya is described and is followed by an exposition of the underlying principles of those actions and an elaborate analysis. The principles of the cosmos and creation are discussed at several points in the exposition, and some narratives are incorporated; however, this all culminates in the accomplishment of the specific action of yajnya. Other *Brahmanas* follow a similar scheme, but *Shatpatha Brahmana* explains it in a particularly clear manner.

Yajnya is the collection of a series of specific actions. The mantra of a particular action is spelt out at the location where the performance of that action is described, and this is followed by another mantra appropriate to the subsequent action. The fundamental explanation of those actions is provided elsewhere in the texts, and these explanations are not given in a serial order. Therefore, knowledge of vijnana is not available at one location nor in a sequential order. The rishis, engaged in deep meditation and dedicated reflection, discovered the fundamental principles and elements of the creation of this universe, and these discoveries appeared in the form of mantras. In ancient times, the rishis validated the tattwas after analysis and experimentation.

Ojhaji has not carried out these experimentations because the materials needed to do so are not available in Bharat. However, he has explained the underlying principles. Readers of *The Cosmic Matrix* will gain an idea of those principles, see the internal coherence and correlation of various hypotheses and experiments, and discern the manner and justification of their application in real life. Although the traditional scholars did hold the *Vedas* in great reverence, they missed the significance of the contention that these texts are the repository of the entire gamut of knowledge — "past, present and future".[18] They focused on the study of the mantra portion and, by and large, ignored the darshana portion. Itihas and *purana* have been totally ignored.

Ojhaji came to the firm conclusion that the secrets of the *Vedas* cannot be unravelled without the help of other branches, and in consequence made a conscious and strenuous effort to rise above the fragmentation of wholistic knowledge caused by the preoccupation of traditional scholars with 'specialisation' in

one branch or another. The deep-seated concept of gradualism in the 'evolution' of human knowledge has also impeded the full realisation of the grand vistas of the *Vedas*. The biased view that the *Vedas* mark the 'childhood' of human intellectual growth has encouraged the tendency to look down upon the 'scientific' achievements of that period. In contrast, Ojhaji believed that the 'Vedic period' was the highpoint of 'science' in this land. Subsequently, several books of sciences were lost and have not been regained so far.

This work is dedicated to my teacher, mentor and *guru*, Pandit Motilal Shastri, and his guru, Pandit Madhusudan Ojha. Maharaj Ji (as we respectfully addressed Pandit Motilal Shastri) initiated me into this enchanting and exciting realm of profound knowledge articulated by the rishis in the *Vedas*. He received it during 20 years of dedicated and devoted discipleship to Ojhaji, who had discovered this invaluable treasure of knowledge through his extraordinary genius. He rescued these lost riches of humankind's attainments from the debris of ignorance, distortion and misrepresentation which covered them for several centuries, in what was an unparalleled excavation of lost knowledge. He explored the vast ocean of Vedic knowledge and discovered invaluable gems. The subjects enunciated in this work, and the corpus of the literature bequeathed to us by Ojhaji and Maharaj Ji, are old; but the method of their treatment of those subjects is novel.

The author has presented in this and other works a very brief glimpse of the legacy bequeathed to humanity by these great scholars. If there are any inadequacies or errors in this presentation, the responsibility is entirely that of the author. Explaining the profound and subtle scientific theories,

applications and formulations of the *Vedas* is an overwhelming undertaking. It requires exhaustive knowledge of various branches and disciplines of the *Vedas* and *Puranas*, and demands an 'unfreezing' of various technical terms from the mould of ignorance, prejudice and misinterpretation in which their meaning has been cast.

These problems are compounded by the author's choice of the English language in which to present the penetrating wisdom of the seer-scientists. Translating and communicating their insights in the modern idiom, in a language that is ill-equipped for the task and by a person whose mother-tongue is not English is, in a sense, a reckless adventure. Yet the author hopes that his efforts will generate interest in the invaluable treasures contained within the *Vedas* and facilitate access to their immense untapped potential in solving some of the baffling mysteries of our cosmos and of existence. He hopes that these works will spur on a long and sustained research into the rediscovery of this lost knowledge for the sake of the well-being of humankind as a whole, and for the benefit of all the individuals who comprise this cosmos. *The Cosmic Matrix* is a humble contribution towards paving the way for that long and arduous endeavour.

SECTION ONE

na tatra chakshugachhati
na wak gachchati no manah
na vidmo na vijaneemo
thathaitada anushishyat

KENA UPANISHAD: 1:3

The eye does not go there, nor speech, nor mind. We do not know it definitively (to be such and such); hence we are not aware of any method of explaining it or instructing others about it.

Why 'Cosmic Matrix'?

(by way of explanation for the title of this work)

IT IS BY NO MEANS EASY TO EXPRESS A WHOLE RANGE of subtle, sophisticated and complex concepts in a caption which would cover diverse phenomena. We have settled on the title *The Cosmic Matrix* because 'matrix' is a term of great depth, breadth and subtlety.

A matrix is a medium in which something is bred, produced or developed. It is a setting in which a particular activity occurs. It is an environment in which a process develops. Matrix is a point of origin, a location from where growth takes place. A matrix is a mould in which something is cast or shaped. In printing, a matrix stands for a metal block into which a character is stamped or engraved so as to form a mould for casting type. A matrix is like an engraved dye used to strike a coin or medal.

The rock material in which a fossil or a gem is embedded is a matrix. In fact, any relatively fine or homogeneous substance in which coarser or larger particles are embedded is a matrix. Matrix also stands for the (positive or negative) copy of an original disc recording which is used in the making of other copies.

A matrix represents an array of symbols or mathematical expressions arranged in a rectangle of rows and columns, treated as a single entity.

A matrix is an expression which would become a statement if its variables were replaced by constants. It is an interconnected array of elements which has a number of inputs and outputs and resembles a lattice in its design. A circuit designed to produce outputs which are linear combinations, in different proportions, of a number of inputs is also a matrix.

An organisational structure in which two or more lines of command, responsibility or communication may run through the same individual is a matrix. It is a rectangular array of potential image points. In transformational grammar, a matrix is a sentence into which subordinate sentences are introduced.

This work presents the view of the cosmos as enunciated by the seer-scientists several millennia ago. They saw the cosmos in all its subtlety, complexity, continuity and fluidity. They saw the origins and experienced the ultimate source that has no origin. This work deals with the vision of the cosmos as articulated in the *Vedas*. It also makes reference to the theories which were prevalent before the vedas were discerned and discovered. It explains the cosmos as an interface of supraphysical energies. Drawing on the wisdom of the seer-scientists, it identifies the relationship between the supraphysical, physical and material domains. It locates the single source from where the cosmos originates, and explains how duality emerges in that homogeneity. It illustrates the interaction of *agni* and *soma*, which gives rise to all the properties comprising the universe. It reflects on the dialectics of matter and energy, of mind and matter, of day and night, of motion and stasis, of consumer and consumed. In other words, this work reveals dimensions, components, constituents and facets of the cosmos.

We find that the 'indescribable' phenomena of the cosmos can best be captured as a matrix, hence the title *The Cosmic*

Matrix. This title clarifies the fact that this work seeks to portray the cosmic matrix in the light of the *Vedas*. It rediscovers the ancient insights of the *Vedas*, and unearths lost knowledge from the rubble of prejudices and preconceived notions. It does not deal with cosmology, neither in terms of the speculations of modern science nor of mythology and fable. Rather, it presents a coherent, internally consistent view of the cosmos.

The formulation 'the speculations of modern science' has been used with deliberation, because there is considerable speculation in modern science about the origin as well as the possible fate of the universe. There are no definitive, observational conclusions. Virtually all astronomers favour Big Bang cosmology as a theory, yet no consensus has been reached concerning the origin of the cosmos. Various alternative theories have been offered as challenges to the Hot Big Bang, such as the Cold Big Bang theory. There are several models of the cosmos. But the modelling of the sources is too uncertain and the detected events too rare at present to offer decisive conclusions. Astronomers know best the properties of the galaxies closest to our own — that is, galaxies as they appear today. But the assumption that more distant (and therefore younger) galaxies look the same as they do now has become more and more untenable.

Every generation traverses its own path to discern the ultimate truth about the universe. Every generation thinks it has found the definitive answers, but there is no finality. To impose the conclusions of one generation as definitive answers and to dismiss and denigrate the perceptions and discoveries of other generations is to attempt to suppress humankind's irrepressible spirit of enquiry and investigation. The search for the truth about the cosmos continues. *The*

Cosmic Matrix resumes that search in the light of the *Vedas* after a lapse of several millennia. Hence this title.

Rishi Kumar Mishra
(angiraso bharadwajah)
Belonging to the ancestry of the seer-scientists
Maharshi Bharadwaj and Angiras.

It is the most persistent and greatest adventure in human history, this search to understand the universe, how it works and where it came from. It is difficult to imagine that a handful of residents of a small planet circling an insignificant star in a small galaxy have as their aim a complete understanding of the entire universe, a small speck of creation truly believing it is capable of comprehending the whole.

MURRAY GELL-MANN,
Nobel Prize (Physics), 1969

The Universe of Modern Science
An Overview[19]

THE MODERN SCIENTIST DEALS WITH THE PHYSICAL universe of which we are a part, while the rishi or seer-scientist deals with the supraphysical universe of which the physical universe is a part. Whereas modern science uses the tools of observation, hypothesis, experimentation and conclusions, the seer-scientists go beyond the limitations of these tools. The modern scientist *tells* us, on the basis of her or his observation, experimentation and analysis, how this universe came into being and how creation took place. The seer-scientists help and guide us to discover these truths for ourselves, indicating that human beings have an enormous untapped potential to realise this Truth or Ultimate Reality for ourselves.

Modern scientists tend to dismiss all that is outside their domain as 'metaphysical'. An average but avid member of this clan claims to adhere to reason and rationality, and decries all that eludes her or his framework as 'irrational' and 'superstitious'. Yet there is an increasing number of noble exceptions in the world of modern science, people who acknowledge the limitations of their efforts and recognise the challenges and complexities with which modern science is finding it increasingly difficult to cope. This increasing number of knowledgeable people, who are not fundamentalist 'believers' of modern science, recognise that science is an

ongoing process which never ends. There is no single Ultimate Truth to be achieved, after which all the scientists can retire.

Because this is so, the world is far more interesting, both for scientists and for the millions of people in every nation who, while not professional scientists, are deeply interested in the methods and findings of science. They are willing to pause before jumping to reject all ideas which extend beyond the confines of their thought systems. To all of these people we extend the invitation to join in the effort to become acquainted with the formulations of the Vedic seer-scientists.

It is fitting to begin by rejecting the belief that the ancient insights of the seer-scientists were the product of mere speculation. The rishis 'saw' the Truth after considerable experimentation and 'scientific' investigation. It is difficult to repeat those experiments today, largely because the physical and intellectual training required for them has disappeared. No trainers and teachers exist nowadays who could prepare the seeker for those experiments. This problem is compounded by the fact that a large number of theoretical works have been destroyed or have otherwise vanished.

However, the practical applications of those theoretical formulations, some of which are in vogue even now, provide sufficient indication of their validity and feasibility. These indications are available in the areas of astronomy, linguistics, musicology, mathematics, engineering, architecture, medical science, psychology, sociology and other fields. We attempt in the current work to introduce some of the basic concepts, formulations and principles enunciated in the *Vedas*.

As we present the framework of the cosmic matrix as outlined in the *Vedas*, our readers will glimpse the exposition of the process of creation. They will also receive some insights into the definition of the coming into being of the universe, the explanation of what happens before a living body is born,

and what happens when the body is divorced from life. We shall cover the ground of modern science in this chapter — with respect to the universe — before we enter the world of the seer-scientists as elaborated in the *Vedas* and associated literature. In tackling the first of these we are aided by the specialist knowledge of cosmology, which fulfils the needs of those who question the nature of the physical universe.

Cosmology deals with the origin, evolution, large-scale structure and possible end of the cosmos. Its basic premise is the principle that the universe is homogeneous in space (on average, all places are alike at any one time), and that the laws of physics are the same everywhere. In 1929 it was discovered that the universe is not of a fixed size but is expanding. Since then a gradually increasing understanding of the cosmos has evolved. The present consensus among physicists is expressed in terms of a cosmological model bearing the misleading name of the 'Big Bang' — despite the fact that 'Tiny Puff' model would be a more appropriate appellation. We shall return to a discussion of this model later in the chapter.

At the ultimate beginning, the energy was so high and dense that all known physical laws broke down. However, the not-so-ultimate beginning can be explored by simple extrapolations of results obtained at the frontiers of quantum physics. Although the vast majority of particle physicists consider Quantum Field Theory as the best theory to date, it is still far from scientifically proven to be correct in all its details. According to this Quantum Field Theory model, a small fraction of a second after the 'beginning', many kinds of particles and their anti-particles roamed about in equal amounts and collided with each other, immersed in tremendous heat.

Scientific cosmology can contain no hint of the idea that the world was constructed by some being who is not a part

of it. When we come upon something beautifully or intricately structured, it is our most natural impulse to ask, "Who made it?" Scientific cosmology demands that we learn to give up this impulse if we are to follow its path. Since by definition there can be nothing outside the universe, a scientific cosmology must be based on the notion that the universe made itself. Western religious beliefs envisage the beginning of creation and the coming into being of the cosmos at a particular moment. They were events. However, quantum cosmology has upset this apple-cart with the important implication that there was no beginning. Rather, there were increasingly large 'Big Bangs', and the multiverse — that is, the existence of numerous universes — goes on forever. This removes the necessity of grappling with the question of what existed, if anything, before the Bang. The multiverse has just been here all along, according to quantum cosmologists.

Modern scientists assert that intermediate bosons and photons were actually identical at the beginning of the universe. They only began to differentiate during the evolutionary process, transforming the initially homogeneous, banal and relatively simple universe into today's rich and complex one. However, they do concede that although we observe tremendous variety in nature at the macroscopic level, when we dive into the infinitely small — approaching the fundamental building blocks of nature — we find an unbelievable simplicity. Two or three quarks, three colours, two or three families and a couple of bosons modify the picture. We seem to be strewn like sea froth on the waves of space, in innumerable faint, wispy tendrils of light which are the galaxies. Some of these are solitary wanderers, but most inhabit communal clusters, huddling together and drifting endlessly in the great cosmic darkness. Before us is the cosmos on the grandest scale we know. We are in the realm

of the nebulae, eight billion light years from Earth, halfway to the edge of the known universe.

There are some one hundred billion galaxies; on average, each has one hundred billion stars. There are perhaps as many planets as stars in all the galaxies. Eminent scientists have begun to question the earlier assumption that there is life on our planet only. In the face of such overpowering numbers, what is the likelihood that only one ordinary star — the sun — is accompanied by an inhabited planet? It seems far more likely, they feel, that the universe is brimming over with life which we humans do not yet know about. We are just beginning our explorations.

We do not intend to challenge the assertion that Eratosthenes discovered that the earth is a little world in the third century BC in the Egyptian city of Alexandria. There is no doubt that he was a great astronomer, historian, geographer, philosopher and mathematician. But the Western scientists who have constructed this history were obviously unaware of the knowledge contained in the *Vedas*, which are among the oldest storehouses of the human mind's forays into the secrets of the cosmos. Alexandria's connection with Bharat, and the movement of talented people between the two have also not been fully explored.

Reconstruction of this part of history has become difficult due to the destruction of one of Alexandria's greatest libraries, seven centuries after its founding. The heart of the library was its collection of books, which were garnered from all the cultures and languages of the world by agents sent abroad to buy up whole libraries. Accurate numbers are difficult to estimate, but it seems probable that the library contained half a million volumes, each a hand-written papyrus scroll. What happened to all those books? By all accounts, the library itself was deliberately destroyed.

No evidence is available at present to indicate whether far-sighted sages in other civilisations shared the insights of the rishis. Therefore, we have to proceed on the assumption that the most ancient insights about the coming into being of the cosmos are those contained in the *Vedas*. Unfortunately, these insights were also concealed, misrepresented and distorted, a subject which we must remain content to mention only in passing here.[20]

We return now to the belief among modern scientists that our universe — or at least its most recent incarnation — is some 15 to 20 billion years old, the time lag since a remarkable explosive event called the Big Bang. At the beginning of the universe there were no galaxies, stars or planets, no life or civilisations; rather, there was merely a uniform, radiant fireball filling all of space. The classical form of the Big Bang Theory describes the aftermath of the Bang as the early, hot, dense universe expanded and cooled. It describes how the light chemical elements were synthesised during this expansion, and how matter coagulated to form galaxies and stars. But it says nothing about what banged, or what caused it to bang.

The Big Bang model of cosmology also asserts that the universe originated from a singularity of pure energy. As time went by, the universe expanded and cooled, and in that process more and more of the initial energy became confined as matter. Many different types of particles were being cooked in the hot cosmic furnace, not necessarily the familiar quarks (the constituents of protons and neutrons) or electrons. With the expansion and cooling of the universe a kind of selection mechanism not only favoured the creation of quarks and electrons over other types of particles, but also generated an excessive number of particles over anti-particles. Surviving the annihilation, these excess particles organised themselves into more complex structures, until eventually atoms —

mostly hydrogen — were formed when the universe was about 300,000 years old.

Modern science tells us that the universe comprises matter. Matter is made of atoms, and atoms are made of protons, neutrons and electrons. For each particle of matter there is another particle, an 'anti-particle', which is essentially the same as the particle but with an opposite electric charge. In this view the universe is somehow unbalanced, biased toward the existence of matter over 'anti-matter'.

An atom consists of a nucleus and electrons. The nucleus consists of protons and neutrons, and a force between the two which keeps them together in the nucleus. (This is the force that makes the nuclear reaction which makes the bomb.) The forces of the universe include gravity, electromagnetic force, the 'weak' force manifested in certain kinds of radioactivity such as the so-called beta decay, and the 'strong' force which underlies the nuclear force that holds neutrons and protons together in the atomic nucleus. All these forces are mediated by the exchange of certain kinds of quanta, or quantum mechanical packets of energy.

However, modern science has now arrived at the conclusion that the distinction between matter and forces is somewhat artificial. Since particles can absorb and emit other particles, that which is matter and that which is force depends on the player's position. A particle may very well be at the same time a genuine particle — hence, matter — and a force. In a general sense, a vacuum is space unoccupied by matter. The old idea that the world consists of matter and vacuums is no longer one to which physicists subscribe. They cannot really answer questions like: what is matter? They can only tell you how it behaves, and where the word is useful.

Forces are conveyed through a vacuum by particles we generally view as virtual: they are there but are hidden under

the cover of the uncertainty of quantum mechanics, the impossibility of measuring quantities with arbitrary precision, and thus particles do not appear as such. It is conceivable that the exchange process which differentiates matter from force is local, since it is dependent on the physical situation of the particles. A particle is at the same time matter and a virtual particle, ie. the emanation of a transmission across space of something modern scientists label 'force'.

Virtual particles create themselves spontaneously out of a vacuum, for brief instants. What makes their appearance possible is the principle which allows energy to be created for a short moment only. The nature and the behaviour of particles depend on the state of the vacuum, and the key to the problem is precisely the way in which a vacuum evolves. Modern scientists believe that a vacuum has undergone a deep metamorphosis since the creation of the universe up to now.

The electromagnetic or ordinary force which produces the phenomena of magnetism and electrical attraction is due to the exchange of particles called photons. These particles make up a ray of light in very large numbers. Electromagnetic force is responsible for electricity and magnetism. Its existence explains, for instance, why two particles of the same charge repel one another. It also explains why the negatively-charged electrons orbit around the positively-charged nucleus in atoms. Therefore, the presence of electromagnetic force explains the solidity of ordinary matter.

Gravity is a force of attraction, which has an effect on mass only. It acts over an infinite range and is the weakest of the four fundamental forces of nature. Gravity is transmitted through the exchange of gravitons. In contrast, the strong force is the most intense of the four and is transmitted through the exchange of particles called gluons. The strong force retains quarks inside a proton or a neutron. Because its

intensity grows with distance, it is impossible to separate quarks from one another, and consequently it is impossible to observe an isolated quark. The strong force explains the cohesion in the atom's nucleus. It is more powerful than electromagnetic force, which makes protons repel one another.

Light plays an all-important role in the study of the universe. The physics and chemistry of stars are known only through their light, and their distance from us is expressed by means of the velocity of light. The 'light year' tells us not only how far away an object is, but also how long ago the light we examine was started on its way. For example, we do not see the sun where it is, but where it was eight minutes ago. Nor do we see faint stars of the Milky Way as they are now, but more probably as they were when the Egyptian pyramids were being built — and the ancient Egyptians would have seen them as they were at a time still more remote. Therefore, chronologically we are far behind events in this universe.

The most important principle of 20th-century physics is that all observable properties of things are about relationships. Even space and time must be spoken of in terms of relationship. There is no such thing as space independent of that which exists in it, and no such thing as time apart from change.

Before we conclude this brief familiarisation with the universe of modern science, we should include a passing reference to the way in which some scientists view the demise of the universe. The study of the origins of the universe is a common topic for cosmologists, and various aspects of this subject have been studied and discussed for decades. But the study of how our universe will end has all but been ignored by modern science, which may be due in part to scientists' belief in the inevitability of our future demise.

Those who have paid some attention to this problem assert that the demise of our universe starts right here at home with our own sun. Initially it will expand to envelop our entire planet, raising the temperature on the earth's surface until the oceans disappear into massive clouds of steam. Human beings will die out rather early on (unless they have developed an underground infrastructure or a very advanced mode of interstellar travel), along with the other flora and fauna. After completely enveloping our planet and baking it to a cinder, the sun will contract to a white dwarf approximately the size of the earth, before joining the growing collection of burned-out chunks of condensed matter left over from the demise of other stars. Naturally enough, those who believe in the multiverse contest this view.

There is much more emphasis and theoretical speculation today on overall unification, as attempts are made to unify all of the forces and to describe all the particles in a single theory. Many theoretical physicists believe that in fact all the laws of physics are unified, and several acknowledge that the phenomena of mind and consciousness actually do exist. The signals from the *Vedas* could be of profound significance for such people.

What modern science has achieved, and what it is still grappling with, indicate that the Vedic insights could be of great value in advancing the frontiers of human knowledge about the cosmos and the universe. In fact, an awareness of the advances of modern science and a recognition of its limits are an enormous help in fathoming the subtleties of vijnana, the rich legacy bequeathed to humankind by the rishis. We simply need to proceed with some openness, for without this it would be futile to engage in this effort.

Jnam te ham sa-vijnanm
idam vakshamy asheshatah
Yaj jnatwa neha bhooa nyaj
jnyatavyam awashishyate

SHRIMAD BHAGWAD GEETA 7:2

I shall now impart to you jnana along with vijnana. When this is explained in full, nothing further in this world remains knowable.

(Jnana is the knowledge that this entire diverse and variegated universe emanates from one single harmonious source, and vijnana is the knowledge of how this unity is transformed into diversity and plurality. Jnana is the knowledge of the unifying principle, while vijnana is the knowledge of how that unifying principle evolves into the multiplicity which comprises the cosmos. ***RK Mishra***)

Philosophy is a hypothetical interpretation of the unknown... Science is the captured territory, and behind it are those secure regions in which knowledge and art build our imperfect and marvelous world. Science is analytical description, philosophy is synthetic interpretation.

WILL DURANT, *The Story of Philosophy*

The Universe of Darshana

THE COURSE OF HUMAN HISTORY IS ESSENTIALLY A battle of ideas between jnana and vijnana on the one hand and philosophy and science on the other. This battle has taken numerous forms: economic, political, social and ideological. The contours of this continuing battle have shaped human minds, attitudes and endeavours; they colour our judgement of what is right and what is wrong. As the situation obtains today, the battle lines between the East and West are drawn along this divide. The East is essentially Asia and the West is essentially Europe. When we speak of the West, we mean the mentality of post-Christian Europe. "We will describe therefore as European anything bound up with this race and we will affix this common denomination to all the individuals issued from it, whatever part of the world they may happen to inhabit."[21]

It is necessary to underline the fact that this geographical division only pertains to the 'recent' situation, in what is merely a few centuries in the long history of human existence. There is some evidence to show that before the rise of 'modern' religions, science and philosophy, common or similar world views were shared by the human community in all parts of the globe. In that sense we can delineate these two contending world views, not only in terms of geography but also of historical horizons. Thus we can characterise them

as 'ancient' and 'modern', and we may use the geographical and historical names as synonyms.

The central difference between the two is stark. The East sought to organise its life in harmony with nature, while the 'modern' West unleashed a campaign to 'master' nature, to bend it in accordance with its will and to exploit it for its comfort. Nature includes all animate and inanimate beings, embracing animals, plants and vegetables, rivers and mountains, planets and stars.

The East sought nature's endowments as blessings, while the West launched itself on the road of exploiting nature. The story of 'modern' technological advance is the story of mankind's efforts to establish mastery over nature, developing the most sophisticated tools to exploit her. For those of us who believe in the civilisational tradition of the rishis, kindness to animals, for example, is central to our attitude. In the West, in keeping with the theory of use-value, killing animals in order to gratify the palate is integral to the common attitude. The 'ancient' treated nature as mother, the 'modern' has behaved towards her at best as supplier of consumable objects, and at worst as enemy. The former worshipped her, while the latter molested and raped her. "All these civilizations may well be incomparably more ancient than the Greek, but this does not prevent some people, blinded by what may be termed the 'classical prejudice', from persistently maintaining the theory, in the face of all the evidence, that it is those other civilizations which are indebted to the Greek and have felt its influence: it is extremely hard to carry on a discussion with such people because their opinion rests on rooted preconceptions."[22]

The West apparently became victorious in this battle of ideas and the 'modern' prevailed. This victory was secured primarily by the use of ruthless force and consolidated by

political, economic and cultural domination. This victorious march, from West to East, was halted only when the wave reached the region which was given a new name — India — by the victors. Here a large percentage of people continues to cling to the 'ancient' civilisational view even after 1000 years of onslaught. In contrast, the past has been completely annihilated in Europe and West Asia; the memories have been so thoroughly wiped out that it is extremely difficult to recover the traces. It is worth mentioning that serious, although extremely painful efforts are noticeable in Europe to rediscover suppressed and forgotten roots.

THE MODEL OF PHILOSOPHY

Philosophy is proclaimed as the foundation of the West's victorious world view, and its protagonists look upon others with utter contempt and arrogance. For them, the others — that is, the East and most notably India — consist of barbarians who are incapable of the kind of philosophy "which emerged in Greece". According to them: "The term philosophy itself defies all attempts at translation into Oriental, barbaric languages."[23] In Hegel's view: "The real philosophy begins only in the Occident. Here the spirit goes down into itself, immerses itself into itself, posits itself as free, is free for itself. Philosophy can exist only here (ie. the Occident) and hence we have free constitutions only in the Occident. Philosophical thought and social and political reality are inseparable."[24] Time and again Hegel refers to those features of Indian society which he considers to be incompatible with the spirit of philosophy.

According to the German 'Indologist' Max Müller, there was no "real philosophy" in India. He asserts that the "freedom of the individual" which is the prerequisite of the

"reality" of philosophy was never attained in India, where philosophy never freed itself from religion and mythology.[25] It is interesting that Max Müller repeatedly emphasises the inseparability of religion and philosophy. "We should damnify religion if we separated it from philosophy: we should ruin philosophy if we divorced it from religion."[26] (The 'ancient', especially India, speaks of *dharma* which is entirely different from 'religion'. Dharma, simply stated, is a way of life in harmony with nature.)

Schwegler asks: "When and where does philosophy begin?" and replies to his own question thus: "Obviously... with Greek philosophy."[27] The "so-called philosophy" (dismissed as theology or mythology) of the Orient (China and India) and "the mythical cosmologies" of the most "ancient" Greeks are thus omitted. The Western world of thought is replete with such arrogant assertions. For example, according to F. Michelis: "No Asian people... has lifted itself to the heights of free human contemplation from which philosophy issues; philosophy is the fruit of the Hellenic spirit."[28]

E. Duhring asserts that: "'Ancient' philosophy is essentially Greek philosophy... That which the mind of other peoples and especially the Orient has aspired to in a related direction has remained more or less at the stage of the primeval fantasies of the peoples."[29]

This supercilious attitude is not confined to India, China and the East, however. It is also evident in the 'modern' philosophers' dismissal of pre-Christian Europe. F. Uberweg and M. Heinze claim that: "Philosophy, as a science, could not originate among the Nordic peoples, who are distinguished through their strength and courage, but do not have culture, nor among the Orientals, who are indeed capable of producing the elements of a higher culture but who tend more to

passively preserve such elements rather than improve them through mental activity...."[30]

Enslaved people often imitate the master race. Even when fighting against enslavement, the people tend to do so by trying to demonstrate that they are no different from the dominant power. Unfortunately, scholars in our country have been making strenuous efforts, for a variety of reasons, to 'prove' that this Western assertion is wrong, and that this country did have its own true 'philosophy'. In the process they have distorted and misinterpreted our knowledge systems.

While pre-'modern' (ie. pre-Christian) cultures were totally annihilated in Europe and West Asia, the attempt to do the same in India by sword, gunpowder, battleships and even by the subterfuge of trade and commerce did not fully succeed. To subdue the Indians' stubborn resistance, it was considered necessary to so subvert their minds that the indigenous intellectuals and academics would clamour to prove their similarity to the West. Those who served this venture were glorified as intellectual giants, and were "made to suffer the elaborately organised ignorance that passes under the name of a 'modern education' — often dearly purchased for them by still pious but unsuspecting or complacent parents — [and they] have had their powers of discernment so disastrously upset that they seem no longer capable of receiving ideas through the medium of their own language; and their readiness to swallow quite uncritically the most hazardous hypotheses, even those relating to their own traditional doctrines, provided they have been put forward by some European sociologist or philosopher, is evidence of a state of mind that can only be described as defeatist; and among these people are to be found men of supposedly high standing and illustrious lineage, occupying responsible positions as rulers, leaders or instructors, but whose

professed leadership is of the very essence of dependence and servility."[31]

Among the few critical thinkers in the West is a growing but as yet feeble realisation that "Western civilization, with its special features, is simply one civilization among others, and what is so pompously called 'the evolution of civilization' is nothing more than the development of that particular civilization from its comparatively recent origins."[32]

'Modern' science is a continuation, an advanced stage of the modern or 'Christian' philosophy. The crisis of modern times — in economics, science, society and the life of individuals — indicates that human beings have a greater chance of realising that the course which 'modern' science has set for them could lead to unmitigated disaster for the human race. For peace, survival and well-being, for individual and collective happiness, human beings must once again treat nature as mother, respect all life and realise that there is enough in nature to meet everyone's need, but not enough for insatiable human greed. "For the Westerner, a true knowledge of the traditional doctrines offers the only effective means of escaping the impending disaster that so many dread but feel powerless to prevent, through a process of inward reintegration and of reform in the literal sense of the word; so also for the Easterner it remains the indispensable means of consolidation, self-renewal, independence and recollection; and for the two jointly it spells the bridging of the existing rift."[33]

VIJNANA AND THE WESTERN WORLD VIEW

Vijnana is an essential part of the ancient world view of Bharatavarsha.[34] It looks at the universe as an integrated whole, unlike the 'modern' view in the West which sees it as

a sum of its numerous parts. The difference, therefore, is between a wholistic and a segregated view, and this is reflected in every area of life and society. For example, the ancient system of health care known as ayurveda treats the whole person, whereas 'modern' medicine treats the part afflicted by disease. While the latter seeks to repair a particular part of the body where it locates the disorder, ayurveda proceeds on the basis that the roots of a disorder lie in the totality of the person.

Given the hold that philosophy has on the modern mind, it may be helpful to initiate our readers into the various thought systems which held sway in the land of the *Vedas* over the past several centuries. To do this we have to explore darshana, a term which modern scholars have translated as 'philosophy'. But darshana is not philosophy. Darshana is closer to 'vision' and is not an intellectual question as is inherent in the term 'philosophy'. Literally, darshana means 'to see'.[35]

We must also acquaint ourselves with the material sciences, because the modern mind relies on these tools in its search for truth. For of a variety of reasons which we need not explore here, the modern mind has chosen to deprive itself of other tools of knowing Reality, tools which reside within the individual and can be invoked and developed.

All this groundwork must be done because the point of departure for the sojourn into the realm of vijnana and its perspective on creation and the cosmos, which we shall be presenting later in this work, is by no means an easy task.

'RITUAL': A PEJORATIVE TERM

Often when we use a product, such as a car, we may not be aware of the technology which went into the manufacture of

that product. This does not mean that we as the driver are superstitious because we are driving the car without knowing the theory and technology behind its functioning. One who applies the technology and assembles the car may not be aware of the laws of motion and other theories underpinning the technology. That does not mean that (s)he is performing a 'ritual' which has no rationale. The scientists who know the theory may not be able to apply the technology or use the product. Such disconnections do take place.

'Modern' intellectuals have dismissed 'ancient' thinking about the process of creation as metaphysical speculation, and the concomitant practices as 'rituals' and 'superstitions'. This is so because they are unaware of the basis of these thought processes and the internal consistency of the knowledge systems. 'Ritual' is a pejorative term which dismisses various practices as 'superstitions'. Such intellectual arrogance, combined with vested commercial, ideological and political interests, dampens the motivation to pursue these practices with patience and perseverance. Students of Vedic science must overcome these factors in their pursuit of knowledge if they are to succeed in their quest to know Reality.

II

According to Sir Monier Monier-Williams, darshana is a philosophical system "six in number, viz. (Purva)-Mimansa by Jaimini, Uttara-Mimansa by Badarayan, Nyaya by Gotama, Vaisheshika by Kanada, Samkhya by Kapila and Yoga by Patanjali."[36]

According to Pandit Madhusudan Ojha, the six schools of darshana exist in Bharat to satisfy the enquiries which often arise in people's minds. Some errors have crept into these darshanas. For example, *Nyaya*, a prelude to these darshanas,

and *Yoga*, their epilogue, have been treated as darshanas themselves by several scholars. *Poorva Meemamsa* — which is merely the study of the meaning of sentences — has also been included in the category of darshana. In actual fact, the six darshanas are these: 1. *Charvaka*; 2. *Baudha*; 3. *Jain*; 4. *Vaisheshika*; 5. *Samkhya*; and 6. *Vedanta*.

Because the first three do not accept the *Vedas* as the source of their validity, they are categorised in our tradition as atheist philosophy or darshana. The latter three schools accept the *Vedas* as the proof of their legitimacy and are therefore called *aastik* (theist) philosophies. These — Vaisheshika, Samkhya and Vedanta — are further divided into various schools.

Nyaya, Vaisheshika, Samkhya, Yoga, Meemamsa and Vedanta are defined as darshanas because of ignorance of the fact that darshana aims to investigate the fundamental tattwa — the basic factors which go into making of an entity — of the universe. However, such an investigation is only found in Vaisheshika and Samkhya where the causes of the universe are analysed. Vaisheshika propounds the theory that the *anu* (atom) is the fundamental tattwa of the universe, while Samkhya holds the view that nature is its independent cause. Because Samkhya is knowledge, and Yoga is the process of gaining that knowledge, Yoga should therefore be included in Samkhya.

There is an investigation and elaboration of Brahma and karma in the Brahmana texts of the *Vedas*, and the methodology used to harmonise the formulations and discern their meaning is Meemamsa. The *Meemamsa Shastra* was prepared in two parts, authored and presented by two scholars. This has led to the erroneous description of these as two separate systems. In fact, Meemamsa constitutes a single philosophical system.

Some scholars have raised the objection as to why Poorva Meemamsa should not be considered a darshana, when

Brahma and karma are investigated and analysed in it. The answer is that Brahma and karma are the subjects of reflection and debate in Poorva Meemamsa, but the fundamental origins of the cosmos are not investigated and analysed therein. Therefore, Poorva Meemamsa cannot be counted amongst the darshanas.

Meemamsa decides and directs when and how various edicts of veda are put into practice. It guides a practitioner in yajnya and other operations. In fact, even the formulations of the *Upanishads* relate primarily to Brahma and nothing else; a comprehensive enquiry into and reflection on the origins of the cosmos occupy a secondary place in these texts. The *Upanishads*, *Brahma Sutras* and other works investigate Brahma in accordance with the *shrutis* and therefore are included within vijnana. However, as these are also in the form of *smriti*, they are included in darshana. (Smritis are written by sages and scholars, while shrutis are 'seen' directly by the seer-scientists.)

Uttara Meemamsa takes Brahma as the foundation of the cosmos, and therefore is included in *shareerak* or *vedanta darshana*, popularly called Vedanta.

In his work entitled *Shareerak Darshana*, Pandit Madhusudan Ojha states that Vaisheshika, Samkhya darshana, Vedanta and *Srimad Bhagwad Geeta* enable us to discern the fundamental tattwa of atma and are therefore included in vijnana. But as these are in the form of smritis, they can also be counted as darshanas.

III

Before we proceed to familiarise ourselves with the cosmic matrix as enunciated by the seer-scientists of the *Vedas*, let us undertake a journey, very briefly, into the above-mentioned philosophical systems elaborated by the scholars and

philosophers of Bharat over the past two millennia. There are extensive writings on these systems by both Western and indigenous scholars, and their protagonists in the land of their origin have engaged in incisive (and often acrimonious) debates. At one level, these debates and discussions reveal the sophistication and subtlety of their arguments and analytical capabilities. At another, they highlight a colossal disjunction with the great scientific tradition of veda vijnana. In some cases, the debates tend to be intellectual acrobatics divorced from the socio-political context. In others, they become alibis for escaping the challenges and onslaughts on the traditions, polity and civilisational mores of Bharatavarsha.

Western scholars 'modernised' the conventional minds in their own mould; they encouraged escapist impulses, discouraged the tradition of scientific enquiry and creativity, and misrepresented experimentation, tests and practical applications as rituals. Preoccupation with these debates blurred the vision of the scholars as far as veda vijnana was concerned. This considerably distorted their understanding and had an extremely harmful effect on the social and political system in Bharat. It injected enormous confusion into the thought processes of individuals and the collective psyche of the people, encouraged emotionalism and discouraged determination and decisiveness. To offset this, a familiarity with these darshanas initiates readers into the subtle processes of thinking and analysis of the scholarly minds of this land and is, therefore, helpful in preparing them to grasp the subtler world view of vijnana.

For the convenience of the 'modern' reader we shall use the term 'philosophy' for darshana, but it will become clear as we proceed that there is a world of difference between the two. Philosophy is different from darshana, even according to the Western view. This is obvious from the assertion that

"The first three universally recognised philosophers — Thales, Anaximander, and Anaximenes — all came from Miletus, a prosperous Greek city in Ionia, on the western coast of what is now Turkey."[37] In actual fact, darshana was formulated and promulgated prior to these thinkers.

The shortest definition of philosophy — and it is quite a good one — is that philosophy is thinking about thinking. Philosophy is rationally critical thinking, of a more or less systematic kind, about the general nature of the world, the justification of belief and the conduct of life. Philosophy is a collaborative pursuit, unlike the meditative activity of sages which is commonly conceived to flourish best in isolated or even hermetic conditions. So philosophers are usually to be found in groups. Yet the form of collaboration involved in philosophical debate is not co-operative, but competitive; it is a business of critical argument. Argument is meant to persuade and must overcome counter-argument in order to succeed. (Sages, on the other hand, merely issue pronouncements to those who visit their retreats.) The diverse aspects of philosophy include metaphysics, or the theory of existence; epistemology, or the theory of knowledge; and ethics, or the theory of values.

THE BROAD OUTLINES OF SIX DARSHANAS

As mentioned earlier, the six popularly acclaimed darshanas are Charvaka, Baudha (Buddhism), Jain (Jainism), Vaisheshika, Samkhya, and Vedanta.

THE CHARVAKA DARSHANA

Charvaka can be described as elementary materialism. In various darshanas, the main instruments of knowledge are perception, inference and testimony. The Charvaka doctrine

holds that these do not lead to knowledge, and dismisses *moksha* as an illusory goal. (Other darshanas regard moksha as 'perfection' or 'liberation'.) It asserts the rationality of believing that life ends with death, and that happiness in this life is the only sensible goal. Against such a background of thought, it is not surprising that the Charvaka school holds that sacred literature should be regarded as false. Proponents of this darshana say that there is no God, no deity or supernatural phenomenon. There is no immortal dimension of existence (soul), and nothing exists after the death of the body. Karma is inoperative; it is an illusion. Everything is derived from *mahabhoota*s (material elements) which have *svabhava* (an immanent force). Intelligence is also derived from these elements and only direct perception yields true knowledge. In conclusion, the aim of life is to gain the maximum amount of pleasure.[38]

THE BUDDHIST DARSHANA

In contrast, followers of the historical Gautama Buddha uphold his Four Arya (or Noble) Truths as the explanation of existence and the prescription of the spiritual path. These are:

1. The truth of suffering — this is the nature of our current existence in this world. (The term 'suffering' [*dukkha*] is sometimes translated as 'unsatisfactoriness'.)
2. The truth of the cause of suffering — this being ignorance of the true nature of existence, the 'self' and reality.
3. The truth of the end of suffering — *nirvana* (liberation for the individual) or Buddhahood (the full enlightenment gained by Buddha himself).
4. The truth of the path to the end of suffering — this is contained within the *tripitaka* ('three baskets') of *vinaya* (discipline), *sutras* (meditation) and *abhidharma* (wisdom).

The natural law of karma is seen as central to the Buddhist path, by which our karmas (good or bad actions), fuelled by our intentions, result in a better or worse rebirth. To help people to adhere to the path which leads to the end of suffering and to accumulate positive karma, Buddha prescribed the Noble Eightfold Path. This consists of right view, right intention, right speech, right action, right livelihood, right effort, right mindfulness and right concentration. Behind these rather bald terms lies a profound philosophical viewpoint, centring on the fact that all constituents of being are transitory, in that everything is impermanent. Beings come into existence, change and then die or disappear. We believe both physical objects and people to be enduring, but in actuality they are nothing but sequences of transitory events. Our cravings and needs drive us to create the illusion of permanence, because we either wish to grasp onto objects and people which we like or to repel those which we dislike or fear.

Our greatest illusion is that we ourselves have an enduring ego or self, which persists throughout our lifetime. All the attachments of 'I' and 'mine' flow from this illusion. 'I', the enduring self, want to grasp and hold onto pleasures, collect property, love others. Yet this 'I' is merely a convenient label for a series of interconnected events. Buddha maintained that the transitory flux of events can never be the source of real happiness and peace; rather, it engenders unhappiness because of our craving nature, which can never be satisfied by conditioned phenomena which are inherently impermanent. This view is summed up by the term *kshanabhanga vada*: *kshana* is a moment, *bhanga* is deviation, and *vada* is doctrine. It signifies momentary deviation from the previous state of being. This should not be interpreted as destruction or decay, but is more akin to a state of universal flux.

This philosophical viewpoint proceeds beyond impermanence to Buddha's theory of *pratityasamutpada* (causation, or the law of dependent origination). To put it succinctly: when this is present, that comes into being; from the arising of this, that arises. When this is absent, that does not come into being; on the cessation of this, that ceases.

The aims of Buddhist practice are either nirvana (to end transmigration and attain final peace for oneself as an individual), or Buddhahood (to strive for full enlightenment out of a strong desire to free all sentient beings from the sufferings of this worldly existence). These are known as the *hinayana* and *mahayana* paths respectively.

Buddha did not claim any kind of divine authority, instead attributing all his realisations and accomplishments to human endeavour and intelligence. His philosophy is based on observation and reasoning. In fact, he was adamant in his advice to his followers that they should accept as the truth only that which their own experience has verified. His characteristic doctrines, such as impermanence and dependent origination, have an empirical justification.[39] However, Buddhism is not a mere observational philosophical system like the Charvaka. It has a significant meditative dimension as well. Its philosophy of the Middle Path harmonises all oppositions and extremes. Observation and reasoning pertain to *samvritti* or *vyavaharik satta* (the phenomenal truth, the world), while meditation and self-realisation constitute the method and goal at *paramarthik satya* (the level of transcendental truth).

THE JAIN DARSHANA

The Jain darshana is divided into the two categories of *digambar* and *shwetambar*. Its major ideas are based on the

proposition that harmful activities cause *jeeva* (the human soul) to become mired in karma, and that the goal of human existence is freedom from all karma. This *kaivalya* (freedom or isolation leading to perfect knowledge) can be attained only through a gradual process of purification, which is gained through *ahimsa* (the practice of non-violence) and other vows.

In summary, classical theory divides the universe into two categories: *ajeeva* (non-living) and jeeva (living) forms. The first of these includes atoms and principles of physics such as motion, rest, peace and time. The category of time includes the notion that jeevas pervade all the elements, plants and animals; each life-force contains energy, consciousness and bliss, and takes repeated birth within a three-tiered universe. At the lowest level, jeevas dwell in hellish realms as animals and humans. However, it is only as a human that a jeeva can achieve kaivalya.[40] The Jainas further catalogue karma in 148 different possible forms known as *prakriti*s, ranging from the destructive to the non-destructive, and grouped in eight primary categories.

According to classical Jainism, the path to liberation consists of 14 stages. One is mired in ignorance at the first stage, but by the fourth stage one catches a glimpse of liberation and numerous fettering karmas are released. After that, successive states involve the adoption of the five principal vows of non-violence, truthfulness, non-stealing, sexual abstinence and non-possession, and lead to the overcoming of the passions. The final stage, obtained an instant before death, signifies the elimination of all remaining karmas.

THE VAISHESHIKA DARSHANA

As noted, the above-mentioned three darshanas of Charvaka, Baudha or Buddhism and Jainism do not derive their authority

from the *Vedas*. In contrast, the Vaisheshika darshana upholds veda, and veda alone. Its authors developed an atomic theory, came to treat numbers very much in the spirit of modern mathematics, argued for a wave theory of sound transmission, and adapted an empiricist view of causality to their own uses. The system owes its name to the fact that it admits *visesa* (ultimate particularities). The metaphysics, therefore, is pluralistic.

The *Vaisheshika Sutras*, written by Kanada, explain dharma as that which confers prosperity and ultimate good on mankind. These *Sutras* enumerate the six categories of substance, quality, action, universality, particularity and inherence. Later, the seventh category of *abhava* (negation) was added. Substances are classified into nine kinds: earth, water, fire, air, ether, space, time, self and mind. For example, the *Sutras* discuss the question of whether sound is eternal or non-eternal (as explained in the fourth chapter of the *Sutras*, non-eternal is identified with *avidya* [ignorance or nescience]); an attempt is made to prove the existence of self by an inference; the different forms of the substances of earth, water, fire and air are identified, each one being either a body, a sense organ or an object; and the notion of action and the connected concept of effort are dealt with extensively, tracing various special phenomena of nature to the 'super-sensible force'.

It is argued that the performance of Vedic injunctions generates this super-sensible force, and that the merits and demerits accumulated lead to moksha (liberation). It is also argued that the self and mind are imperceptible. The *Vaisheshika Sutras* hold that neither action nor qualities may be ascribed to what is non-existent and, further, that negation may be directly perceived; they maintain that knowledge derived from hearing words is not inferential. The Vaisheshika system does not give *sabda pramana* (testimony) an

independent status, but includes it under inference as the Buddhists do. That is why the philosophers of this school are often described as 'half-Buddhists' by traditionalists.[41]

Vaisheshika advocates an atomistic cosmology (theory of order) and a pluralistic ontology (theory of being). The material universe arises out of the conjunction of four kinds of atoms — of the earth, water, fire and air. There are also the eternal substances: ether, in which sound inheres as a quality; space, which accounts for mankind's sense of direction and distinctions between far and near; and time, which accounts for the notions of simultaneity and non-simultaneity and which, like space, is eternal and is the general cause of all that has origin.

The overall naturalism of the Vaisheshika, its great interest in physics and its atomism are all counterbalanced by its appeal to the super-sensible force. Among things ascribed to this force are the movement of needles towards a magnet, the circulation of water in plant bodies, the upward motion of fire, the movement of the mind, and the movements of jeeva (the soul) after death.

Knowledge belongs to the self; it appears or disappears through the contact of the self with the senses and of the senses with objects. Perception of the self results from the conjunction of the self with the mind. Perception of objects results from proximity of the self, the senses and the objects. Error exists because of defects of the senses. When there is absence of this, there is absence of conjunction of the self and the mind that results in life and absence of manifestation of another body. That state is moksha (liberation).[42] Thus, moksha is a state in which there is no body and no rebirth and is achieved by knowledge. Works in accordance with the Vedic injunctions may assist in its attainment.[43]

THE SAMKHYA DARSHANA

The term 'Samkhya' means 'relating to number, enumeration, or calculation'. As an adjective, the term refers to any enumerated set or grouping, and can presumably be used in any enquiry in which enumeration or calculation is a prominent feature (for example, mathematics, grammar, prosody, psychology, medicine and so forth). As a masculine noun, Samkhya refers to someone who calculates, enumerates or discriminates properly or correctly. As a neuter noun, the term refers to a specific system of dualist philosophising, which proceeds by a method of enumerating the contents of experience and the world for the purpose of attaining moksha or kaivalya (radical liberation) from frustration and rebirth.

In the oldest learned traditions of ancient Bharat, intellectual enquiry was frequently cast in the format of elaborate enumerations of the contents of a particular subject matter. This can be seen in the principles of statecraft as preserved in Kautilya's *Arthashastra* and the principles of medicine as preserved in the *Charaka Samhita* and *Sushruta Samhita*, among others. The Vedic corpus itself exhibits this tendency, as do *nitishashtra* (traditions of law) and *rajadharma* (politics). It is in such environments that one finds some of the early references to Samkhya. The follower of Samkhya is one who reasons or discriminates properly and whose spiritual discipline is meditative reasoning. Kapila, Asuri and Panchasikha are linked with old Samkhya tradition (called 'proto-Samkhya' by Western commentators). Their names are frequently referred to in the later technical philosophical literature as important precursors of Samkhya philosophy.

Samkhya[44] is a vigorous and polemical philosophical system, which has a number of distinctive accomplishments: it attempted to establish *pramanas* (certain instruments of

knowledge) and to offer careful definitions of these instruments; it developed a special interest in *anumana* (inference) and constructed a sequence for formulating *avayavas* (inferences made up of 10 members); it attempted, after much debate, to fix the number of basic principles, together with the precise order of their enumeration, including the technical term *tanmatra* ('subtle element'); it fully developed the related notions of prakriti, the transformation of the *gunaparinama* (three gunas), and *satkarya* (the effect's pre-existence in the cause); and it finally accepted, after much controversy, the existence of one primordial prakriti but a plurality of *purushas*.

K.C. Bhattacharya has expressed it well: "Much of Samkhya literature appears to have been lost, and there seems to be no continuity of tradition from ancient times up to the age of the commentators. In such systematic works as we have, one seems to have a hazy view of a grand system of speculative metaphysics."[45] Because the term 'Samkhya' means 'enumeration' or 'relating to number', one reasonable point of departure for presenting the Samkhya philosophical system as a 'complete system of human communication' is to outline the more prominent sets of enumerations, which we shall do here:

ENUMERATIONS RELATING TO THE TATTWAS: BASIC PRINCIPLES

First and foremost is the set of 25 fundamental principles of the system:

1. Pure consciousness (purusha),
2. Primordial materiality (*moolaprakriti*),
3. Intellect (*buddhi*, *mahat*),
4. Egoity (*ahamkara*), and
5. Mind (*mana*, both a sense capacity and an action capacity);

The five sense capacities (*buddhindriyas*):

6. Hearing (*srota*),
7. Touching (*tvac*),
8. Seeing (*caksus*),
9. Tasting (*rasana*), and
10. Smelling (*ghrana*);

The five action capacities (*karmendriyas*):

11. Speaking (*vac*),
12. Grasping/ apprehending (*pani*),
13. Walking/motion (*pada*),
14. Excreting (*payu*), and
15. Procreating (*upastha*);

The five subtle elements (tanmatras):

16. Sound (*shabda*),
17. Contact (*sparsha*),
18. Form (*roopa*),
19. Taste (*rasa*), and
20. Smell (*gandha*);

The five gross elements (mahabhootas):

21. Space/ether (*akasha*),
22. Wind/air (*wayu*),
23. Fire (*tejas*),
24. Water (*apa*), and
25. Earth (*prithwi*).

According to Samkhya philosophy, only the first two of these 25 principles are independently existent, that is purusha (pure consciousness) and moolaprakriti (primordial materiality). In other words, only they exist in some sense as 'distinct' or

'separate' from one another, and are described in Samkhya philosophy as ungenerated, outside of ordinary space and time, stable, simple, unsupported, non-mergent (or non-dissolvable), without parts and independent. The relationship between them is one of simple co-presence. Pure consciousness is inherently inactive whereas primordial materiality is inherently generative, in the sense that it is capable of generating a set of discrete or manifest subdivisions when activated by the catalytic presence of pure consciousness.

The other 23 subdivisions are described as generated, temporal, spatial, unstable, composite, supported, mergent (or dissolvable), made up of parts and contingent. Seven of the subdivisions of primordial materiality — namely the intellect, egoity and the five subtle elements — are described as both generated (that is to say, emergents from primordial materiality) and generative (that is to say, capable of generating subsequent subdivisions). The remaining 16 subdivisions — namely the mind, the five sense capacities, the five action capacities and the five gross elements — are only generated; that is to say, they are incapable of generating additional subdivisions.

Subtle elements are imperceptible to ordinary people who can, however, perceive gross elements. The subtle elements are the generic presuppositions for the experience of all specific objectivity. Five kinds of specific sensations may be experienced: namely, specific vibrations via the ear (speaking, music, sounds and so forth); specific contacts via the skin (hot, cold and so forth); specific forms via the eyes (colours, shapes and so on); specific tastes via the tongue (such as bitter and sweet); and specific smells via the nose (such as the scent of flowers, the stench of rotting garbage).

The subtle elements, therefore, are not functions or capacities (as are, for example, the five senses of the motor

capacities of an organism), nor are they the actual sense organs (eye, ear, and so forth) which, of course, are aggregates of gross elements. Rather, they are subtle, material essences or presuppositions with which perceptual and motor functioning correlate, and through which certain aspects of the material world become differentiated. If such subtle, material essences or presuppositions were not present, no specific objects could possibly be experienced or become manifest, and in this sense the subtle elements correlate with and may be said to 'generate' the gross elements.

Intellect, egoity and mind, taken together, are referred to as *antahkarana* (the 'internal organ'), whose three respective functions are *adhyanasaya* ('reflective discerning'), *abhimana* ('self-awareness'), and *samkalpaka* ('intentionality'). Together they perform the task of intellectual awareness, which functions not only in immediate experience but encompasses the past and future as well.

The five sense capacities and the five motor functions, taken together, are referred to as *bahyakarana* (the 'external organ'). Their respective activities provide mere sensings, namely hearing, touching and so forth; and basic motor skills, such as speaking, grasping and so on.

When the intellect, egoity and mind, the five sense capacities, the five motor functions and the five subtle elements are all taken together, this is referred to as *linkiasarira* or *sukhsmasarira* (the 'subtle body'). This subtle body is detachable from any particular gross body, and is therefore capable of transmigration through a continuing series of gross embodiments.

*Sthulasarira*s (gross bodies) are one-time-only aggregations of gross elements. In the case of human gross bodies, these are genetically derived from mother and father (with hair, blood and flesh from the maternal line, and bone, tendon and

marrow from the paternal line). Such human gross bodies are *jarayuja* ('womb-born') which become enlivened when linked with a transmigrating 'subtle body'. There are also *andaja* ('egg-born'), *udbhijja* ('seed-born') and *svedaja* ('moisture-born') gross bodies for sentient beings other than humans.

In addition to its basic tattwa nature of reflective discerning, the intellect has a set of eight *bhavas* (inherent, fundamental predispositions or instinctual tendencies), which guide the course of life of a sentient being. These are as follows:

1. The predisposition towards meritorious behaviour (dharma);
2. The predisposition towards knowledge (jnana);
3. The predisposition towards non-attachment (*vairagya*);
4. The predisposition towards power (*aisvarya*);
5. The predisposition towards demeritorious behaviour (*adharma*);
6. The predisposition towards ignorance (*ajnana*);
7. The predisposition towards attachment (*avairagya*); and
8. The predisposition towards impotence (*anaisvarya*).

Whereas reflective discerning represents the material dimension of buddhi (the intellect), the fundamental predispositions represent the 'efficient' possibilities of buddhi. The fundamental predispositions, therefore, are called *nimittas* ('efficient causes') and are correlated with eight *naimittikas* (resulting courses of life of a sentient being), as follows:

1. The tendency to move upwards in the cycle of transmigration (*urdhva*);
2. The tendency to move towards final release (*apavarga*);
3. The tendency to move towards a merger in primal materiality (*prakritilaya*);

4. The tendency to move towards increasing control over life (*avikhata*);
5. The tendency to move downwards in the cycle of transmigration (*adhastat*);
6. The tendency to move towards increasing attachment and bondage (*bandha*);
7. The tendency to move towards further involvement in transmigration (*samsara*); and
8. The tendency to move towards declining control over life (*vighata*).

In addition to the set of eight fundamental predispositions which determine the course of life of an organism, a particular 'life-support system' is also necessary for the maintenance of a given life. According to Samkhya philosophy, this support system is provided by a network of five 'winds' or 'breaths' known as *wayu prana*.

The set of 25 basic principles interacting with the set of eight predispositions within the intellect generate what the Samkhya system calls *pratyayasarga* ('phenomenal creation'). This comprises the set of five *viparyaya*s (fundamental 'misconceptions'), the set of 28 *asakti*s ('dysfunctions'), the set of nine *tusti*s ('contentments') and the set of eight *siddhi*s ('spiritual attainments'). Taken together, these are referred to as the set of 50 'categories'.

Samkhya philosophy asserts the existence of 14 levels or realms of sentient creatures "from Brahma down to a blade of grass". These include: the human realm, the realm of (domestic) animals, the realm of (wild) animals, the realm of birds and flying insects, the realm of crawling creatures, and the realm of plants and immovable objects.

Knowable objects are those which can be known by an instrument of knowledge. They consist of 25 principles of

which some are known by perception, some by inference and some by reliable authority. The three kinds of instruments of knowledge are, therefore, identified as perception, inference and verbal testimony. All other means of gaining knowledge are included in this threefold instrument of knowledge. Jaimini, a renowned teacher and proponent of darshana, mentions six additional instruments of knowing: *arthapatti* (presumption), *sambhava* (inclusion), *abhava* (non-apprehension),[46] *pratibha* (imagination), *aitihya* (tradition), and *upamana* (comparison). In fact, these six instruments are encompassed within the triad of perception, inference and reliable authority or verbal testimony. For example, presumption is a variety of inference; and probability, negation, imagination, tradition and analogy are all varieties of reliable authority or verbal testimony. Samkhya maintains that a complete science contains aphoristic statements which indicate the main topics (sutras) as well as discussions of the pramanas (instruments of knowing), such as the following:

- discussions of the 'parts' relevant to a subject matter (*avayava*);
- a statement which describes the overall structural components of the system (*anyunata*);
- a discussion of doubts relating to general principles (*samsaya*);
- a discussion of specific technical problems (*nirnaya*);
- brief definitions (*uddesa*s);
- longer or expanded definitions (*nirdesa*s);
- a discussion of basic principles in sequential order (*anukarma*);
- a discussion of technical terminology (*samjna*);
- a discussion of practical advice that one should follow as a result of following the science (*upadesa*).

It also asserts that liberation results from discrimination or knowledge, and that bondage is a result of misconception.

The *pradhanik* doctrine of Samkhya has four schools. These include *samkhya sutra* and *samkhya karikas*, which uphold that there is no *Ishwara* and that nature is supreme. The pradhanik doctrine does not acknowledge and accept Ishwara, and is categorised as atheist Samkhya. Then there is the Samkhya of yoga darshana, which recognises Ishwara only as witness. The third school of Samkhya acknowledges Ishwara as the motivator or inspirer of nature (prakriti), and is widely referred to in the *Puranas*.[47] The fourth school of Samkhya upholds *Shiva*, *shakti* and *bindu* as the three *padarthas* (fundamental categories) which are the foundation of the universe.

The Samkhyas were champions of the view that the effect exists in potency already in its cause; it merely needs to be 'nudged' in order to make the effect manifest or visible. To be sure, proponents of this view conceived this version of change to be a process taking place in the external world.

THE VEDANTA DARSHANA

Vedanta is the sixth shareerak darshana and has eight divisions, as follows:

1. *The doctrine refined by Shankaracharya.* This doctrine upholds that non-dualist Brahma acts in conjunction with *maya shakti*, the creative power which sets in motion the process of creation. Shankara asserts that "Reality or Brahman is *advaita* (non-dual). The world is false; it is the product of *maya* (creative appearance). The Self is no different from Brahman." In Sanskrit the term is 'Brahma', but philosophers have added an 'n' at the end to distinguish its function as Self from Brahma, who is referred to in

the *Puranas* as one of the trinity of Brahma, Vishnu and Shiva. Shankara is of the view that it is possible for empirical individual beings to realise Brahma by following *jnana yoga* (the Path of Knowledge). Moksha (realisation of Brahma) is the ultimate goal of human life, for moksha is the realisation of one's true nature. Essentially, Shankara's entire philosophy can be summed up in the following statement: *Brahma satyam, jagat mithya, jivo Brahmaiva naparah* ("Brahma is real, the world is false, the Self is no different from Brahma").

Shankara's major works reiterate this philosophy in different ways. His teaching of advaita affirms one simple truth: that there is one Reality, although it is known by different names. In his commentary on the *Brahma Sutras*, Shankara discusses three orders of existence: 1. absolute existence, or Reality; 2. empirical existence; and 3. illusory existence. Absolute existence, or Reality, is that which in principle cannot be sublated by any other experience.[48] The act of sublation presupposes a dualism between the experiencer and the experienced. It involves the plurality of objects, because sublation juxtaposes one object or content of consciousness with another incompatible object or content of consciousness, and judges the first to be of lesser value. The experience of Reality, however, is non-dual, and therefore no other object or content of consciousness can replace it. Brahma is the only Reality; it sublates everything while remaining unsublatable by any other experience whatsoever.

Empirical existence is the objective universe of phenomena, the world of experience, and it is governed by cause and effect. It can only be sublated by the experience of Reality or Brahma, and persists until the direct knowledge of Brahma is attained.

Illusory existence is the false appearance of something which does not exist. Illusions, hallucinations, dreams and wrong perceptions fall into this category. Illusory existence fails to fulfil the functions of everyday empirical truth. For example, the mirage of a sheet of water in the desert is an illusory existence for a desperately thirsty person. Illusory existences are sublated by the ordinary empirical standpoint.

Shankara points out that, logically speaking, anything could come from anything if the effect did not somehow pre-exist in the material cause; but he maintains that the effect, although existent in the cause, is only an apparent manifestation of the cause. Accordingly, Brahma as the cause is the only Reality; the world as the effect is only an apparent manifestation of the cause. Brahma thus becomes both the material and the efficient cause of the world.

Moksha is a state of bliss; it is the realisation of our full potentiality, the discovery of what and who we are — the realisation, in other words, of our true nature. Right knowledge helps us to dispel the erroneous identification of the self with the not-self. Shankara maintains that such knowledge is possible with the help of jnana yoga, the Path of Knowledge.

2. *Ballabhacharya*, born in 1479, propounded the philosophy of pure non-dualism undefiled by maya. He upholds that non-dualist *para brahma* operates without the aid of any fundamental shakti. He suggests that souls are many in number, and that ignorance about the true nature of Brahma is the cause of the soul's bondage.
3. *Ramanujacharya* upholds that Brahma is the same as the God of theism. The world rooted in Brahma is as real as Brahma, and both matter and self are eternal. Souls are

many in number and are essentially alike. Ignorance is the root cause of our bondage, and freedom from ignorance is possible through devotion.

Ramanuja, a renowned 12th-century sage-philosopher, maintains that both Brahma and the world rooted in Brahma are real. He takes the Upanishadic account of creation literally: the omnipotent God creates the world out of himself. Creation is followed eventually by dissolution, then by a new creation. During dissolution God remains as the cause, with subtle matter and disembodied souls forming his body. This is the causal state of Brahma, during which the entire universe remains in a latent and undifferentiated state. God's will impels this undifferentiated, subtle matter to be transformed into gross matter, and disembodied souls into embodied souls according to their karmas. This is the effect state of Brahma.

Ramanuja asserts that the Upanishadic texts, such as *neha nana asti kicena* ("There is no multiplicity here"), do not really deny the multiplicity of objects, names and forms, but rather assert that these objects have no existence apart from Brahma. He concedes that it is indeed true that some Upanishadic texts describe Brahma as the wielder of maya (a magical power).[49] However, he maintains that maya is the unique power which creates the wonderful world of objects, and vehemently refutes Shankara's theory that the world is false and a creation of maya. For Ramanuja, Brahma's created world is as wonderful as Brahma himself.

4. *Bhaskar* and *Nimbarka*, other leading sage-philosophers, propound the view that Brahman operates at times in a dualist and at other times in a non-dualist manner. The Nimbarka tradition holds that liberation is possible only

after complete detachment from the physical sphere/body. According to this school, *kala* (time) is the cause of all the events of the world. It is known by different names and appears in many ways. In its own form it is eternal, but in its functioning form it is non-eternal and is controlled by Ishwara.

5. *Madhva*, a sage-philosopher born in 1197, developed his own views diametrically opposed to Shankaracharya. He upholds the duality of maya and Brahma. The word *dvaita* comes from the Sanskrit root *dvi*, meaning 'two'. The term dvaita, therefore, etymologically means 'duality' or 'dualism'. For Madhva, dualism implies difference, which is said to constitute the essence of things. This is another way of saying that each object is unique and possesses its own nature; this accounts for the difference between one object and another. In short, difference is not only quantitative but also qualitative. No two things or qualities in the world are alike. Two objects which look the same as each other are nevertheless different, because each possesses a self-differentiating characteristic which renders it unique.

   Madhva regards the supreme person — Brahma — as no different from Vishnu, who is the creator, sustainer and destroyer of the world. Nothing can condition Brahma, who is an object of knowledge; he is bliss, and his creation is also bliss. Vishnu (Lord Narayana) is Ultimate Reality, the only independent category. He is the Reality of all realities, the Truth of all truths. He is totally independent, yet we depend upon him for activity, knowledge and existence.

   At the time of the dissolution of the world, he transforms material objects into undifferentiated matter and selves into disembodied intelligences.

6. *Chaitanya Goswami* propounds the view that Brahma is the abode of limitless attributes. In his manifold manifestations he appears as one and integral. He is vested with three potential powers. On the basis of the first, he holds existence. On the basis of the second, known as *samvit*, he knows himself (signifying Self and 'others' — 'others' being the universe); and on the basis of the third, called *ahladini*, he enjoys bliss and imparts bliss to 'others'. His maya shakti is the cause of the manifestation of the cosmos and nature. These potentials of Brahma collectively are called *para shakti*.

7. *Abhinavagupta*, the most outstanding exponent of Shaivism, which flourished in the Kashmir region, upholds the doctrine of direct darshana or experience. Acharya Abhinavagupta Pad, an authority on all four branches of Shaivism, on dramaturgy, literary criticism and aesthetics, belonged to the Kashmiri branch of Shaiva philosophy. In his extensive writings (40 works to his credit), he has given his outstanding exposition on almost every facet of the intellectual traditions of Bharatavarsha. *Tantraloka* is his most voluminous and authoritative work.

Kashmir Shaivism, popularly known as *Trika* or *Pratyabhijna* philosophy, enumerated 36 basic principles in the constitution of the cosmos. Of these, 25 are the same as in the philosophy of Samkhya. The category of maya seems to be taken from Vedantic schools. This school of thought has contributed 10 principles to the study of ontology, which are shiva, shakti, *sadashiva*, Ishwara, *sadavidya*, maya, kala, vidya, *raga* and *niyati*.

Paramashiva, or *anuttara* — the ultimate substratum of all these principles — is sometimes enumerated as the 37th principle, especially in the *kula* system. Unlike the other systems, this school does not divide reality into

ideal or real. According to *abhasavada* (the Theory of Appearance), in whatever form it appears everything is real, since it is the manifestation of the ultimate real substratum, Paramashiva. Paramashiva manifests the entire cosmos out of his absolute will, and this is known as *savatantryavada* or the Theory of Absolute Will.

8. Finally, we come to *tantra* and *agam shastra*. The *agama* prescribes a particular way of life and a practical course of self-discipline in conformity with the theoretical teachings of its philosophy. The term 'agama' (meaning 'scripture') is often used in connection with non-Vedic texts. There are lists of 108 *vaisnava* (upholding the primacy of Vishnu) *agamas* (also called *Samhitas*), 28 *saiva* (upholding the primacy of Shiva) *agamas*, and 77 *sakta agamas* (upholding the primacy of shakti, the feminine manifestation of creative power — also called tantras).

   In the most specific sense, the scriptures of the Shaivites are called agamas. The tantras are sciences dealing with a wide range of problems and prescribing directives for the performance of different practices. Like all other sciences, tantra is strictly reserved for those who are especially qualified to follow the prescribed rules and regulations. Such people are to be trained by duly qualified teachers, who initiate them into the right methods and practices. These tantric practitioners hold the view that shakti is another form of Brahman. The followers of shakti believe in 36 tattwas. According to the *kularnava tantra* (one of the tantric schools of thought and practice), one who is deluded by maya sees not while (s)he sees, understands not while (s)he hears, and knows not the truth while (s)he reads.

The three members of the tantric 'trinity' are Brahma, Vishnu and *Shiva rudra*. They represent the gunas, or qualities

of *rajas*, *sattva* and *tamas*, which may be identified as the principles of activity, reconciliation and negativity. From this triangle come all forms, including the five elements, through different blendings. The individual (jeeva) forgets her or his unlimited nature, which is actually one with Shiva shakti, and considers herself or himself to be a purusha (limited individual) with prakriti (a certain nature).

This chapter contains necessarily brief summations of various darshanas. It is hoped that these explanations go some way towards providing a philosophical background against which to consider the rest of the material in this work.

SECTION TWO

Tama aseet tamasa galaham agre prakitenasalilam
sarvoma idam
Tuchhyenabhi awipihitam yadaseet tapasah tan
mahima jayataikam

RIK VEDA 10:129:3

In the beginning there was darkness,
Intensified darkness, indistinguishable
darkness,
All this visible world was reduced to its
primordial nature.
This primordial world which was enveloped
by the all-pervading power of One,
Before whom the world of matter
is a trifle,
became One (that is, came into existence)
Through the force of His intense activity
and spiritual fervour.

The Ten Doctrines of Deva Yuga

THE SIX DARSHANAS CURRENTLY PREVALENT (*lokayata* and so forth) were all formulated by scholars of modern Bharata, whereas long ago the six vijnanas were popular. The 10 scientific doctrines on the origins of the universe which we shall be discussing in the following sections are very ancient. They were investigated and discovered by *devatas* in *swarga*. The rishis or seer-scientists received these deep scientific insights from the devatas and incorporated them in the texts of the *Vedas*.

In those ancient times a triple world was envisaged on this earth. According to that demarcation, *swarga loka* was established north of the Himalayas, with the Sharyana mountain ranges as boundary. The devatas were inhabitants of swarga and were known as *sadhyas*. In the well-known *Purush Sukta* this fact has been indicated in the mantra *tenam deva ayajanta sadhya rishayancha ye* (The sadhyas performed the yajnya). The devotion, dedication and hard work of the *maharshis* living in swarga so pleased the devatas that they responded by bestowing upon them various branches of the knowledge of the vijnanas.

These 10 doctrines are indicated in the *Nasadeeya Sukta* of the *Rik Veda* (*Mandala* 10, *Sukta* 129),[50] and references may also be found in other mantras and in the *Brahmana* texts. These have all been brought together and organised under the following 10 headings:

1. *Sad-Asad Vada*
2. *Rajovad* (*Raja Vada*)
3. *Vyoma Vada*
4. *Apar Vada*
5. *Awaran Vada*
6. *Ambho Vada*
7. *Amrit Mrityu Vada*
8. *Aho Ratra Vada*
9. *Daiva Vada*
10. *Samshaya Tadechhu Vada*.

Brahma integrated all these doctrines and established *Siddhanta Vada* (a unified principle).[51]

The devatas living in those times could not agree amongst themselves on the fundamental cause of creation. The differences between the devatas on the root of creation/the universe were as follows:

1. *Sata* is the *moola* (foundation) of the universe. Some say *asata* is the foundation and others say it is a blending of sata and asata known as *sadasata*.
2. Some say *amrita* and *mrityu* are the basis of the universe. In other words, creation has taken place from the interaction of one enduring, imperishable factor with one perishable and transient factor.
3. Some uphold day and night to be the cause of creation.
4. Some hold that maya ('the veil') is the cause of creation.
5. Some hold that water is the basic cause of creation.
6. Others propound that dust particles are the cause of creation. (Dust has also been grouped into 'black' and 'white' categories.)
7. Some hold akasha, the sky, to be the source of creation; however,

8. They divide akasha into two categories, some maintaining that creation takes place from the *apar vyoma* or the 'higher' sky.
9. Some say that the devatas themselves are the cause of creation.
10. Others, unable to discern the reason for the creation of the universe, remain in doubt.

An outstanding scholar, called Parmeshthi Brahma, emerged from amongst these sadhya devatas. Maintaining that all these doctrines were partial, he critiqued and refuted them, then integrated them in one doctrine — that Brahma is the foundation of the universe. Reference to this is found in the *Nasadeeya Sukta* of the *Rik Veda* (10:129). The 10 doctrines are as follows:

1. *na sadaseenno sadaseet tadaneem na seed*
2. *rajo no*
3. *vyoma*
4. *paro yat*
5. *kimareewa kuha kasya*
6. *sharmannambhah kimaseed gahanah gabheeram na*
7. *mrrityuh aaseed amritana tahi na*
8. *ratryaahnahaaseet aketah* (first part of *Mandala* 2)
9. *arwak devaasya visarjanaena*
10. *atha ko veda yat aabhabhoova* (*Mandala* 6, second half).

In the first of these two mantras of the *Nasadeeya Sukta* of the *Rik Veda*, Brahma mentions the 10 doctrines by name and refutes them. The mantras state that before the cosmos came into existence there was neither permanence nor impermanence; there were neither dust particles nor, therefore, the possibility of dividing them into the categories of 'black' and 'white'; there was no sky nor, therefore, its higher and lower regions; there was no veil, because there was

nothing that could be concealed; there was neither deep water, nor the differential between enduring and perishable categories; there was neither day nor night, nor any limit on time; since devatas were created later, how could they be the source of creation? In fact, who can know how and from what this cosmos was created?

VYOMA VADA: ORIGIN OF THE COSMOS FROM SPACE

Each of these doctrines seeks to explain the origin of the cosmos. We shall not discuss them in detail, however, because an elucidation of these 10 ancient doctrines is outside the purview of this work. But in order to give readers a flavour of the depth of these doctrines, we shall briefly discuss one of them, namely vyoma vada, the doctrine which asserts that the cosmos originates from space.

According to this doctrine, it is not correct to hold that *vyoma* (space) exists between the sun — and the system centred on it — and the earth. Between the solar system and the earth is *antariksha* (interspace), which exists for as long as the sun and the earth exist. The sun and the earth are independent entities and neither has primacy. The question of whether the sun emanated from the earth or the earth from the sun has also been debated animatedly. According to Chaikitayan, a scholar of the pre-veda age, the earth emanates from the sun and ultimately is subsumed in it. Another scholar, Shalavati, is of the view that the sun cannot exist without the earth nor the earth without the sun.

Both these viewpoints are inaccurate, however, because the earth and the sun are both in the form of a mass and therefore can never be eternal and enduring. Space is their origin; they are sustained in space, and they culminate and

dissolve in space. This viewpoint was explained by Pravajan Jaivali, head of the council of scholars in Panchal Pradesh[52] to Shilak, a scholar of Shalavati.

Akasha (space) does not have a cause. It has no birth and no demise. It has neither a beginning nor an end. It has no foundation. There is nothing except it (space). It is very subtle and cannot be grasped by the sense organs. It is the basis of the cosmos. All that there is has emanated from it. Every individual culminates in space. Whatever is there — ie. all that exists — is in space. It is the foundation of everything.

All material entities are 'effects' of a cause or causes. The pot is the 'effect' and the earth of which it is made is the cause. All material effects ultimately dissolve in their causes, just as when a pot is broken it merges into the earth which was used to make it. To give an example from modern science, when water is 'broken down' it merges into hydrogen and oxygen, the elements which are the cause of water and of which it is the effect. Numerous gases arise from the earth and merge in the air; and the air merges into the sky or space.

Similarly, sound becomes intelligible when it is split and organised in the limited form of letters of the alphabet, and then the letters are joined together in the form of words. But when the words rise above the process of splitting and joining together, they cannot be understood by the keenest of intellects. Then we say that they (as sound) have merged into akasha (space) and become one with it.

Like this doctrine of the origin of the cosmos from space, other doctrines examined the process of creation according to the perception of different scholars, but Brahma refuted them all as being inadequate and partial. He then integrated them in one unifying principle, according to which the Brahma tattwa — which is complete in itself and self-referred —

manifests the cosmos and, as it were, brings it out from within a pre-existent state.

We cannot say that the cosmos, which was embedded in Brahma, is a consequence of that Brahma, because the birth of the universe does not cause any diminution in Brahma nor is the form of Brahma modified in that process. This is the reason why the protagonists of *agama darshana* describe the universe as an evolution of Brahma, a development of that fundamental tattwa. The principle enunciated in the *Vedas* describes Brahma as *pranan* or the 'motion of Brahma'. (Pranan means to express or manifest the universe within. The process of prana is seen in the body as breathing, which involves the influx and exodus of air in the body through the nostrils. Prana is translated as 'breath' in the common parlance of Sanskrit. To overcome the risk of pranan being misunderstood as breath, the seer-scientists make it clear that pranan is *awatam* [without air].[53])

The question then arises how the first tremors of motion arise in formless Brahma. This motion is brought about by the supraphysical energy concealed within Brahma, called *swadha*. This energy causes the first motion; the primal tattwa is known as *rasa* and its energy is known as *bala*.

Parmeshthi Brahma describes the circumstances prevailing in the early moments of the beginning of creation, when total darkness prevails all around like the darkness of utter ignorance. Everything is hidden in this darkness in the same way as an object is lost completely in the depths of infinite waters. This unmitigated darkness is expressed as utter blackness, which in the *Geeta* is symbolic of Krishna and is elucidated in three ways: *nirukta* (Krishna that can be analysed), *anirukta* (that cannot be analysed) and *anupakhya* (that cannot be described).

Hidden energy in its embryonic state lies within that darkness. In its pure form this energy is seething to become

active. This seething is like *tapa* (an intense endeavour), not spurred on by anything external but from its own side. When that energy is activated spontaneously, a breach occurs in that utter unmitigated darkness as if a very thin 'pencil' of light has begun to radiate. This state of primal enlightenment is described as the first purusha (individual) or *awyaya purusha*. In this first 'person' (individual), desire arises, which the mantra defines as the first 'creative outflow' of *mana*.[54]

Awyaya,[55] the primal individual, has five dimensions: *ananda*, vijnana, mana, prana and *wak*. Mana is the original of these, in which desire is born as the first seed of creative energy. This desire has been described by the seer-scientists as longing, lust, feeling, emotions and so forth. The desire to create the cosmos arises with the aid of swadha energy. This first purusha, which is pure consciousness and concentrated bliss, can be experienced by someone endowed with a radical prescience. This requires the capacity to break out of the constraints of given and inherited blinkers, and the ability to devote oneself intensely to 'seeing' the empty space in the core of one's heart where the first purusha is situated. Those who make this endeavour come to know that the eternal and enduring Reality has been bounded by transient reality.

Parmeshthi Brahma wondered: who can say with certainty from where this cosmos has evolved and how it developed so much diversity? It is not easy to know this. (It is also easy not to know this.) The devatas, or supraphysical energies regulating the senses, are the means of all knowledge or awareness. Yet they evolved later than the beginnings of creation, and as such he asserted that they could not be of any help in knowing that first purusha. Only the seer-scientists gained that knowledge.

He was led to wonder if awyaya, the first purusha, knows the secrets of this variegated plurality and dazzling diversity

made possible by its own energy. Why should it know all this? Because it is pure knowledge. Why should it not know it? Because it is beyond maya, the energy which causes the diversity.

Several seer-scientists tackled the questions pertaining to the origins of the cosmos. For example, Maharshi Vishwakarma replied to the queries of inquisitive wise men about the creation of prithwi (the earth) and swarga (heaven/ space) by posing questions to them, such as: "What was that forest, or what was that tree, by the cutting and pruning of which this earth and heaven have been carved out?" In answer he said: "Brahma was that forest, or Brahma was that tree, which has been divided into earth and heaven. O wise persons, having reflected deeply on these questions I can say with certainty that Brahma is the source, the regulator, of this entire cosmos and carries all the worlds."[56]

The comprehension of Brahma, the fundamental factor in the process of creation, is the key to an understanding of the cosmic matrix as enunciated by the seer-scientists. That one fundamental principle has grown, augmented and proliferated into this vast and variegated cosmos. How can we describe the daunting nature of the enterprise to understand this fundamental tattwa? Suppose you look at a piece of wooden furniture, say, a chair, and become curious to find out the source of the wood used for that chair. To satisfy your curiosity, you enter a vast, dense forest with innumerable trees of diverse variety and you begin to look around for the tree and the specific branch of that tree which was cut to provide wood for making that chair.

Our attempt to understand Brahma is many times more intriguing and challenging an adventure than this.

Dwai imau purushau loke
Ksharas ch Akshara eva cha
Ksharah sarvani bhootani
Kutah-stho
Akshara uchhyate

Uttamah purushas tv anyah
Paramaety udhaharatah
Yo loka trayam avishya
Bibharty Awyaya ishvarah

SHRIMAD BHAGWAD GEETA 15:16-17

There are two types of fundamental entities — *kshara,* from which all matter and material entities evolve, and *akshara* is the entity that resides in every individual without any modification or distortion. Purusha is something different. It is the pre-eminent entity. It is called the supreme atma. This factor resides in all the three lokas. The entire cosmos is maintained by this factor called awyaya. This is Ishwara, the regulator of the universe.

An Encounter with Brahma

exploring the origins of the cosmos

BHAGWAN KRISHNA EXPLAINS ON THE PRECEDING page the matrix of cosmic creation in describing the principles known as the three purushas of kshara, akshara and awyaya.

Firstly, let us step back to view the large canvas upon which Brahma stands as the beginning, foundation or root of this cosmos. He is altogether unique and permeates the entire universe. All disciplines and branches of knowledge strive to know the source of the cosmos, for nothing else remains to be known once a person knows this.

This is Reality, the seed from which this entire cosmos has evolved. Although as a seed it is invisible, its development, extension, expression and manifestation are visible all around us. Thus one basic factor acquires numerous facets, and our variegated and diverse universe comes into being. Remove these diverse facets and the root remains the same: Brahma.

From one single seed grow several extensions: flowers, fruits, leaves, creepers, twigs and branches, until ultimately a huge and impressive tree comes into being. Similarly, in the one eternal Reality we can discern the rise of numerous facets, the totality of which is the universe. In the growth of the tree, a number of other materials assist the seed to develop: the earth contributes, water nourishes, manure adds to the vitality and air lets the flowers bloom. Yet Brahma has no other

assistance in the fascinating process of creation of this universe, because he is the first factor in the process of creation and therefore exists before other factors come into being to help him.

Without any creation of this first factor, the process of creation of this universe goes on. This is the special feature of Brahma who is otherwise without features, being indescribable. Material objects and entities can be described, but supraphysical factors do not lend themselves to any such description because their processes are not comprehensible by the intellect. They elude our powers of logic.

Many great teachers, mentors and seer-scientists have communicated, in different ways, the daunting undertaking of reaching, comprehending or encountering Brahma. As we mention in the previous chapter, in the *Rik Veda* Maharshi Vishwakarma asks the wise and thoughtful seer-scientists: "What was that forest? Or what was that tree, by pruning which this earth, the solar system and interspace (the space between the earth and the sun) have been created? O thinkers and scholars, reflect in your mind and ask, who carries all the universes and is sitting as the master?"[57]

These questions have been answered in the *Tatteriya Brahmana*, yet the seeker-student is left to cope with the challenge of discerning the meaning behind the obvious. A 'forest' in this context is a storehouse of numerous known, unknown and strange objects. And the reply in many ways is as enigmatic as the question: "Brahma is the forest. Rather, Brahma is the tree from which the earth, the sun and space are carved. O wise scholars, after deep reflection I am telling you categorically that Brahma carries all the universes and is sitting as the master."[58]

The task of understanding Brahma, therefore, implies understanding the process of creation. It involves discerning

how this cosmos comes into being, how it becomes as we observe it and how it ceases to be. The task is beyond the capacity of the tools at our disposal, namely the reach of our senses and the artificial props created to augment the range of our sense organs. A seeker needs to pursue this goal with total commitment to the exclusion of all other attractions, and with unflinching determination. This point is made so vividly in the dialogue between Yama and Nachiketa.[59] Let us begin the attempt to encounter Brahma, therefore, with patience and perseverance.

BRAHMA: THE WORD AND ITS MEANING

The root cause of the gross universe is Brahma, and the entire cosmos is the expansion of that one factor. The word 'Brahma' evolves from *brihmana* which means 'expansion'.[60] The expansion indicated by the root *brihman* is in all directions, and thus Brahma is all-pervasive like the space in the sky. Being all-pervasive, there can be none greater, wider or bigger than him. This universe is born of that Brahma.

All that exists has name, form and function. All names are the wak of Brahma, all forms are the 'eyes' of Brahma, and Brahma is the atma of all functions. Let us pause for a moment to focus on the forms and functions of all individuals in the cosmos. The point from which an individual or entity arises is the *uktha* (centre) and the extent to which an individual or an entity can be seen — the extent, in other words, to which the sama of that object extends — is the Brahma of that entity or individual.

How do we discern or discover Brahma? How can we identify and acknowledge his existence?

This universe comprises what we observe, and is filled with activity. The existence of Brahma in this universe is

identified in seven different ways: 1. Brahma is the witness to awareness; 2. Brahma gives joy; 3. Brahma is the vessel in which the universe resides; 4. In fact, the universe is merely a matter of perception; 5. The universe is an offshoot of Brahma; 6. Brahma is the support of this universe; and 7. Brahma is the container in which the universe is encased.

To begin with the first of these, Brahma is the witness to our awareness or consciousness. Although the dazzling diversity and variety of properties in the universe make Brahma appear to be numerous, he is discernible as one and alone. This can be likened to hundreds of ornaments that are nothing but gold, or a group of soldiers being known as 'an army', a collection of trees as 'a forest', or to an oil lamp being a collective activity of a piece of cotton, some oil and a lamp. Likewise one Brahma resides in the many that comprise the universe.

Just as air pervades the vast space in which it flows and space acts as its support, similarly Brahma is the support of all activities known by various terms such as maya, bala and so on. The concept of support can be understood from the example of waves rising and falling on an expanse of water, the water itself acting as a support for the waves. Or we can envision it as a reflection in the mirror, the latter being the support of the former. In all cases contact is made between the support and the supported, but this contact has no impact on either.

Brahma also becomes the foundation or prop. If we were to toss several dust particles or tiny pieces of stone into water, the water becomes their prop. Brahma is also the foundation of all entities, in the same way as a vessel or the container in which a substance resides is the foundation of that substance. Brahma is the base on which the universe rests, as moist cloth is the base of water, sesame is the base of oil, and milk is the base of cheese.

Some scholars, including the first Shankaracharya, regard Brahma as a perception and the universe as an illusion or a shadow cast on *vivarta* (Reality). On the foundation or platform, which is Brahma, the universe is like the illusion of a dream. According to this viewpoint, the universe has no real existence. Because of our imagination, in a dream we see a car, a driver and a road which do not exist in reality. In the same way, aspects of various activities in this universe become discernible in Brahma.[61]

We discuss the terms rasa and bala in a separate chapter. Although bala is transitory, Brahma vests rasa in it and bala is unable to perform any transaction without the enduring and eternal atma, which is rasa. Brahma is the source of all actions (karmas). Just as we often smell the fragrance of a flower in the water in which it has been kept, so do the operations of karma continue in the rasa that is Brahma.

THE 12 RELATIONSHIPS OF THE COSMOS AND BRAHMA

The cosmos has 12 types of relationship with Brahma, which are enumerated in *Srimad Bhagwad Geeta*.[62] They are as follows:

Brahma is the pace or motion of the cosmos.
Brahma sustains and nourishes the cosmos.
Brahma is the master and regulator of the cosmos.
Brahma is everyone's witness.
Brahma is everyone's friend.
Brahma is the foundation of everything.
Brahma provides shelter to everyone.
Brahma is the treasury of the entire cosmos.
Brahma is the existence of the cosmos.
Brahma is the root cause of everything in the cosmos.

Brahma is the producer of everyone.
Brahma subsumes everyone in him.

Brahma is described, firstly, as *gati* or motion. Gati also signifies the state reached by an individual at the end of motion. The nature of the universe is to be tied in 'knots', and encountering Brahma leads to a release from these entrapments. In a sense, this 'release' signifies that the universe is now subsumed in Brahma. To know this process is to know the secret of cosmic motion.

The second relationship of Brahma with the cosmos is one of *bharta* (sustainer). The entire universe is a process of the absorption and rejection, inflow and outflow of supraphysical energies. If there is no fresh intake of energy, weakness results after the outflow of energy. An individual then turns towards the centre of existence, the atma, which is permeated with rasa and sustains the individual. This internal supply of energy enables an individual to regain lost strength, despite having not absorbed energy from any outside source. It is for this reason that Brahma earns the description of sustainer or bharta. (Notwithstanding the fact that bala comes into its being from rasa, bala mounts a massive assault on the latter and yet is unable to establish victory. Since rasa is in a formless state, the eruptions of bala in various forms ultimately are subsumed in and overpowered by rasa.)

The entire cosmos and its creations are all due to the natural process of bala, which is called 'nature' or prakriti. Purusha is present in a subtle manner in the aggregate of balas collated by prakriti.[63] Subsequently, various dimensions or offshoots arise, which lead to the emergence of the various dharmas (attributes and characteristics) of that entity. Purusha has a special significance, as that from which all the dimensions arise.

We also need to understand what is meant by the formulation that, in the ultimate analysis, Brahma is indescribable. We know that the feelings which float within our inner consciousness are 'tasted' internally. They are like the sweetness — the word 'rasa' is used in everyday parlance — that we devour within and are unable to describe. (Rasa is indescribable when in its essential form as Brahma.) Tastes such as bitter, sour, salty, pungent and sweet are experienced and yet cannot be described in words. The sweetness of grapes, chocolates and sugarcane is different from the others, yet all of them are sweet. The same is true for other tastes, such as bitterness. When it comes to the state of pure experience, the object from which the experience emanates and the experience itself become indistinguishable and therefore cannot be described.

Sat-chit-ananda brahma is experienced everywhere by everyone, yet to ask for its description we must first define the taste of sweetness or bitterness. If we are able to do so, we can then indulge in the audacity of attempting to define Brahma in words. We have noted that we are unable to define the experiences of the senses. How, then, could we describe the Brahma who is the amalgamation of sat (truth), chit (consciousness) and ananda (bliss)? He has no attributes, no specificities and no modifications. He transcends time, direction and space. He is one, and at the same time innumerable. He is without adjectives and is unmanifest. Hence he is called 'unknowable' or 'indescribable'. Neither speech nor mind can discern him.

At another level, sat-chit-ananda brahma has two aspects: *nirapeksha* (the subjective) and *sapeksha* (the objective). In a state that is beyond objects and is therefore pure essence, Brahma is subjective and independent. When he is interwoven with objects and is a blend of both bala and rasa, he becomes

objective and dependent. Whatever is discernible is objective, *sapeksha brahma*. What is beyond the reach of the senses is independent. Let us take the example of any object discerned by our senses. It has a name, a form and a function. When we say that the individual is not the form, nor the name, nor the function, then by a process of negation we reach its quintessence — the Brahma — from which it evolves.

This Brahma resides everywhere as pure existence. This is known as sat. Awareness of the existence — chit — is to gain or reach it. And ananda is the quintessence, the tattwa, that is bliss. To be in a state of bliss through realising the essence of existence is the fusion of the three dimensions of sat, chit and ananda. This is Brahma, and this is to encounter the source of the cosmos.[64]

Although Brahma has no attributes or specificities and is devoid of name or form, several names — including 'Brahma' — are attributed to him. Each of these names is based on and related to various functions emanating from him, and their usage enables us to explain, elaborate, analyse and instruct about him. Without a name we would be unable to begin this quest. These names are mainly used to facilitate the process of realising him. Pandit Madhusudan Ojha, the great scholar of the *Vedas* in our times, describes him as rasa.[65] And the raw energy or power flowing from him has been given the name bala.

Bala, shakti and kriya — strength, energy and activity — are three descriptions used to indicate Brahma, the source of all sources. These relate to three states of the same fundamental principle, which in the dormant state is called bala (strength), in the state when it is poised to act is called shakti (energy), and when involved in action is called kriya (activity).

Expansion, augmentation or growth is a process by which a *padartha* (category or a substance) expands, multiplies or

grows in numerous ways without allowing its own entity to be destroyed. The Sanskrit word for this process is brihman (or *vikas*). Fruits and flowers grow on a tree or a creeper by the process known as brihman. This also applies to the fundamental tattwa, Brahma, which is the source of the evolution of the universe and has the nature of augmentation and multiplication (brihman). It gives birth to the universe while retaining its changeless, fundamental identity. Thus, because of its property of brihman, it is called Brahma.

Sarvam etad brahma ayam atma brahma
so ayam atma chatushpata

MANDUKYA UPANISHAD 1:2

All this (entire cosmos) is Brahma. Atma is Brahma. It is divided into four parts.

The Four Limbs of Brahma

THE VIJNANA OR 'SCIENCE' OF BRAHMA — WHICH we label the 'cosmic matrix' — is subtle, serious and sophisticated, so that seeker-students need to reconstruct their mental attitudes and shed their prejudices in order to penetrate this fortress. Modern cosmology is defined as "the science of the universe as a whole", in which the term 'universe' covers "all existing things, the whole creation, the cosmos, all mankind."[66] However, in this work we use the terms 'world', 'universe' and 'cosmos' distinctively from each other. Within our pages the 'world' connotes all sentient and inanimate individuals residing on this earth. The 'universe' is the aggregate of all the worlds, including the planets, stars and galaxies (known and unknown) which have been explored and are still the subject of exploration by modern science. The 'cosmos' is the aggregate of all the universes, mostly beyond the domain of modern science. We shall be elaborating upon these terms as they occur in the text.

At this juncture, it is sufficient to state that our world and the universe are physical entities, while the cosmos incorporates both physical and supraphysical entities. There is a close relationship between the physical and supraphysical factors. The physical is a manifestation of the supraphysical in much the same way as matter is a manifestation of energy.

In certain situations a factor or tattwa can be both physical and supraphysical, just as an atom can be both a particle and a wave.

The fundamental tattwa manifests itself in several forms in the same manner as electrical energy manifests itself in the physical world as a light bulb, a fan, a refrigerator and numerous other appliances. This fundamental tattwa can be discerned in its various aspects, each of which has an identity of its own but is not separate from the base or source, which manifests as the cosmos. As we study it, we become acquainted with its various aspects, which can be likened to the limbs of a body, the branches of a tree, the legs of an animal or the petals of a flower. Yet there is a subtle and significant difference. For while there can be no body without limbs, there can be a limb without a body; and although there cannot be a flower without petals, there can perhaps be a petal without a flower. In the case of the fundamental tattwa, it and its manifestations are intertwined. It is important to understand this relationship well. Various expressions come and go on the face of an accomplished actor, each representing a distinct mood; but there can be no expression if there is no actor, and there can be no acting which does not reflect a specific mood. The two are inseparable and intertwined. Similarly, the fundamental tattwa — which is Brahma — and its various limbs are inseparable and intertwined.

The science of the cosmos is the science of Brahma. He is the source from which all individuals in the cosmos evolve, both physical and supraphysical. We shall be discussing the etymological evolution and conceptual definition of this term 'Brahma' in some detail. Since the supraphysical universe is beyond the domain of physical science, no English equivalents are available for the terms used in the Vedic sciences. Thus we are left with no alternative but to use the original Sanskrit

terms, whose meaning and significance we shall define as we proceed, in order to enable our readers to comprehend them.

I

THE FOUR LIMBS OF BRAHMA

All that is, is Brahma. All that exists evolves from Brahma. Brahma is the atma — the source and centre — of all that exists, and has four aspects.[67] These are: 1. *pura*; 2. purusha; 3. *paratpara*; and 4. *nirvishesha*. These are also known as the 'four legs' on which Brahma stands. Let us now take a brief look at each of these four.

PURA

The diverse varieties of sentient and inanimate individuals comprising the cosmos are aggregations of innumerable modifications of one essential, fundamental tattwa. These modifications are material, physical and supraphysical and all of them reside in one 'location', rather as if they were residents of one town (pura means 'town'). Therefore, the first limb of Brahma, pura, conveys to us the fact that all individuals evolve from a single source. This evolution takes place through the process of *vikara* (modification) of the fundamental tattwa. Vikara is a change of form or nature, an alteration or deviation from any natural state. Such transformation, modification, production or derivation from an individual occurs in three ways.

Firstly, a modification takes place in the fundamental tattwa by virtue of a change in its spatial location. This can happen through a change of direction, and can also take place with the passage of time. A change in the numbers into which an individual evolves also conditions the modifications; and an

alteration in size and volume brings about modification in an individual. When an individual is split, is brought closer to or moved away from another individual, modifications occur in it. So the original tattwa and its evolvements could be distant from each other, or totally intertwined, or segregated into different departments.

Secondly, modification occurs through the interaction of sperm and blood, the intake of food and water, the growth of vegetation and the inflow of the 'juices' of the earth, space, sun or moon. (We shall discuss later what is meant by the 'juices' or 'essence' of the earth, sun, moon and other individuals.)

Thirdly, some modifications are inherent in the specific individual. For example, foam is a modification of water and cream is a modification of milk; these are inherent in the original individuals of water and milk respectively.

The aggregate of these three types of modification is called the 'cosmos' in relation to Ishwara and purusha, and a 'body' in relation to jeeva and purusha. The cosmos is divided into the three categories of supraphysical, material and physical. The 'body' is also divided into the three categories of causal, subtle and gross body. The 'body' is an external instrument employed by the purushas for their purposes, namely the creation of the cosmos and its regulation.

PURUSHA

As noted above, the body or pura is of three types: the body permeated with atma (the physical body), the body permeated with devatas (supraphysical forces) and the body permeated with *bhootas* (material substances). Purusha — 'one who resides in pura' — is so called because it is a particular type of prana, which enters all these three types of body and resides there. Purusha itself is of three types: kshara, akshara and awyaya.

Of these, *kshara purusha* is *upadana karana* (the proximate cause), the atma of all modifications. Every modification arises from kshara purusha, is sustained by and finally subsumed in it, and all that exists does so because of kshara purusha. For example, a pot exists in clay and cloth exists in threads. In that sense, kshara is the material cause of creation.

Akshara purusha resides within kshara purusha as *nimitta karana* (the incidental cause) of all individuals. Although associated with the material substance, it remains unmodified and unchanged. *Awyaya purusha* resides within akshara purusha. Bereft of cause-and-effect factors, it is purely a support and becomes a cause in that sense only. For instance, the fact that our eyes are able to see in sunlight makes the sunlight a cause, but it is only a supporting cause. It is not affected or modified by the process of our eyes seeing an object.

PARATPARA

The three purushas mentioned above — kshara, akshara and awyaya — are mutually intertwined and cannot exist without each other. *Goodhatma prajapati* evolves as a purusha created by the integration of these three. This is perceived as a single entity but comes into being through the deep entrenchment of kshara in akshara and of akshara in awyaya purusha, which itself is a result of the power of maya.[68] *Goodhatma* is one undivided individual, which nevertheless permeates separate material objects and thus is divided into numerous entities. Circumscribed by each of these, it appears to be different in each individual. Thus the three purushas, which are integrated as one, appear to be innumerable prajapatis. This is possible because of the *upadhi* — a peculiarity vested in them by *yoga maya*, a special category of maya.[69] (Upadhi is that which is placed in substitution for another thing or disguises it. It is

the adventitious condition which co-exists with the thing to be proved. For example, in the case of a mountain which is smoky because of its contact with wet fuel, upadhi is the fuel.)

In actuality, these innumerable prajapatis arise from a single source, and are finally subsumed in that source. That source is limitless precisely because the prajapatis are limitless. The source is also bereft of any upadhis (peculiarities). These individuals — the innumerable prajapatis — are like bubbles on the surface of the vast, limitless ocean of Brahma, who supports them. They arise in that ocean and, when the time comes, are subsumed in it. That Brahma in which all these individuals arise and are subsumed is known as *paratpara brahma* and is not confined by the bounds of time, location or direction. It is a limitless ocean of balas.[70]

Awyaya purusha brings akshara and kshara into existence and is situated in the subtlest location in the matrix of purushas. If we were to visualise them arranged as a pyramid, with kshara as the base and awyaya at the peak, this subtlest point is also the highest point. Awyaya purusha can only operate on the basis of a tattwa which is bigger than itself and limitless. Paratpara is this limitless entity which is described as superior to, or subtler than awyaya. It is an ocean of innumerable balas, a particular disposition of limitless Brahma. It is the quintessence of all the numerous balas, possessing the attributes of all of them. These countless balas arise and vanish every moment. They possess different traits or attributes, and are incorporated into the single, indestructible, enduring essence of the rasa known as paratpara.

NIRVISHESHA

The never-changing rasa and ever-changing bala cannot exist without one another. They are like inseparable twins which

are totally intertwined. However, we can attempt to envisage rasa in its absolutely pure state with the help of our intelligence and by stretching the faculty of imagination. Such a rasa is called nirvishesha. While paratpara is the aggregate of all conceivable traits and attributes, nirvishesha is bereft of any traits or attributes.

Nirvishesha brahma is described in the *Vedas* as beyond the reach of the mind; it does not lend itself to intellectual comprehension and cannot be encompassed in words. As nirvishesha brahma is bereft of any discernible functionality or quality, it cannot be identified by any symptoms, and its lack of unusual or distinctive features leads it to be described as 'unknowable'. Yet consciousness is able to discern it as the 'is' factor in everything that exists. For example, even in the phrase "It is not...", nirvishesha exists as the 'is'.

II

We have noted earlier that the modifications which exist in the ambit of kshara purusha are collectively described as a 'body'. No part of the 'body' is outside the scope of the triple purusha. With a view to moving further into our study of vijnana, we shall now explain the three purushas of kshara, akshara and awyaya in brief.

THE FIVE CLASSIFICATIONS OF KSHARA

Kshara purusha is closely linked with atma and is operational in five different ways, which are classified as follows: 1. *karana shareer* (the causal body); 2. *sookshma shareer* (the subtle body); 3. *sthoola shareer* (the gross body); 4. *praja*; and 5. *vitta*.

The causal body is the first classification of kshara purusha. In our discussion of the creative supraphysical energy

of bala, we shall come across its two aspects of vidya and avidya. These are translated as 'true knowledge' and 'false knowledge'. The causal body is a product of and is synonymous with avidya, the bala which manifests as false knowledge. (Knowledge here is not used in the sense of what we know, but in the sense of the supraphysical energy which causes and carries all knowledge, true and false, in the same way as a current carries electrical energy.)

The subtle body is comprised of the aggregate of all the supraphysical energies, which are *agni*, wayu, *soorya*, *bhaswar soma* (the subtle light) and *dik soma* (a subtle supraphysical energy which permeates space). The five mahabhootas of prithwi, *jala*, teja, wayu and akasha which comprise the gross body are produced from these supraphysical energies.

In the technical sense used here, all sentient entities with reproductive capacity, such as males and females, are included in the praja group, which is the fourth operational classification of kshara. (Praja literally means 'offspring' and is a consequence of procreation.) Although individuals in this group are always associated with a 'body' in the sense that all that is procreated has a bodily form, this is different from the causal, subtle and gross bodies described above.

The fifth classification of kshara is vitta, which literally means 'property' or 'wealth'. Here the term vitta connotes artificial entities which are not durable and form a relationship with an individual only temporarily. All that is recognised as a 'consumable' or 'usable' entity falls into this classification, which is of two types. The inanimate vitta comprises such entities as houses, clothes and so on, while the sentient type includes employees, horses and cattle among others.

THE FIVE CLASSIFICATIONS OF AKSHARA

Akshara purusha, which resides within the kshara purushas and regulates all their modifications, also has five classifications: Brahma, Vishnu, Indra, agni and soma. These five aksharas dwell in the body of every individual and regulate the related pranas (supraphysical energies). Of these, Brahma, Vishnu and Indra reside in the heart or centre and are grouped together under the term *hridya* ('located in the heart'). In contrast, agni and soma are described as being *prishtha* ('located at the back').

Of the three located in the heart, Brahma is the cause of existence, Vishnu is invested with the functionality of yajnya, and Indra is endowed with *veerya* (vitality). As the factor of existence, Brahma is the substratum of atma. Yajnya generates the motion that brings one individual closer to another, causing attraction between one individual and another. It also gives rise to hunger, an intense desire in one individual to 'consume' another. Indra generates strength and enthusiasm, and also causes the impulse of forward movement.

When Brahma interfaces with Vishnu, *soma* (contraction) takes place. When Brahma and Indra interface, agni is produced and expansion occurs. Indra releases a specific type of prana which throws up energy. As a result of this process, prajapati becomes famished and emaciated, whereupon Vishnu becomes active, drawing 'juices' from other locations. Prajapati absorbs these 'juices' with the assistance of the prana known as *pratishtha*, and is thus able to compensate for the energy of which the body was denuded earlier. The body appears to remain the same because the energy expelled by one type of prana is compensated for by the inflow of another type of prana.

Brahma is the prana which facilitates the absorption of the inflowing supraphysical energy, and therefore becomes the

factor of nourishment and sustenance of individuals. Indra, the prana which causes the outflow of energy, and Vishnu, the prana which causes the inflow, are engaged in a continuous exchange or contest. (It should be noted that sustaining prana is not visible in some individuals, such as the spoken word. However, the presence of that prana needs to be recognised even in these cases, because the word could not be uttered without it.)

The attraction and repulsion among the three pranas cause variation in the quantum of supraphysical energy present in the body, which results in the states of childhood, adulthood and old age. There is less outflow and more inflow of supraphysical energy in childhood, allowing for growth and development of the body. The inflow and outflow are virtually balanced in adulthood, as both addition and diminution take place. Inflow reduces and outflow increases in old age; as a body ages, the attraction and absorption of rasa (the 'juices') from outside lessens while the expulsion of energy increases. Consequently, the 'juices' which sustain the body continue to diminish until ultimately, when *pratishtha prana* (the sustaining supraphysical energy) is expelled from the body, the individual dies and ceases to exist.

The processes of creation and dissolution indicated above help us to visualise the birth and demise of all individuals in the entire cosmos, including huge entities like the earth and the sun. All modifications spring from the three pranas of akshara purusha. Attraction, the prana spurred on by Vishnu, causes the 'birth' of an individual. The sustaining prana, spurred on by Brahma, ensures the existence of the individual. And the expulsion of the sustaining prana, spurred on by Indra, causes the demise or destruction of the individual. The mutual interaction, harmonisation, clash, conflict and regeneration of Brahma, Vishnu and Indra give rise to waves

of six stimuli in a sentient being: hunger and thirst, sorrow and stupidity, ageing and death.

We have noted earlier that two types of akshara purusha — agni and soma — are located at the back of an individual. All modifications emanate from these two aspects of akshara. Agni and soma are generated when the sustaining prana establishes union with the pranas of attraction and repulsion, either by joining together or by achieving a state of balance. Agni is the specific type of akshara which rises and then stabilises or ceases to exist. Soma is the specific kind of purusha which stabilises by a process of attraction. Since agni and soma are two specific states of sustaining prana, they can be said to be included within its domain. In that case, three pranas become pre-eminent. As stated above, the sustaining prana is known as Brahma, while the prana of attraction is Vishnu and the prana that expels or repels is Indra. These three aksharas are worshipped as devatas in the *Puranas*,[71] and Indra, which is never separated from agni and soma, is given the name *Shiva*. (In a strict technical sense the two are different.)

The term 'devata' is applicable to Brahma, Vishnu, Indra, agni and soma. Of these five manifestations of akshara, Brahma occupies the principal position in terms of their organisational sequence in different 'compartments'. It is suggested that Brahma is followed by Vishnu and Indra. This is the subject of more specialised study, exploring the process by which these supraphysical energies interact; how the resultant compound energies travel in various parts of the cosmos; how they give rise to vedas and create new individuals; how they traverse distance; how they give rise to day and night; and how wak, the quintessence of all matter, is formed from their transformation.

AWYAYA: NEITHER CAUSE NOR EFFECT

As noted earlier, kshara purusha is the proximate or 'material' cause of the cosmos and akshara purusha is the incidental cause. Awyaya is different from these two, being neither cause nor effect. However, from another perspective awyaya is the ultimate cause of the cosmos. In *Shrimad Bhagwad Geeta*, awyaya is described as the cause of the entire cosmos. (We shall discuss this in some detail separately.) In brief, there appears initially to be a contradiction in the formulation that awyaya is neither cause nor effect and that it is the ultimate cause of the entire cosmos. But there is no contradiction, because in a very fundamental sense there are two types of causes. There is a cause (or causes) which produces an effect, such as clay being the cause that produces the pot and cotton being the cause that produces the shirt. There is another type of cause, however, which 'produces' the effect by its sheer presence, even while it has no direct input into the effect of the product. For example, our eyes make it possible for us to see an object, so in that sense our eyesight 'produces' that object before us. The sun or a lamp do not themselves 'see' the object. However, unless there is an association between our eyes and the sun or lamp, our eyes are unable to produce the effect of 'seeing' the object. As we well know, our eyes cannot produce the effect of seeing in utter darkness.

So while kshara is the inherent cause of the cosmos and akshara is the incidental cause, it is awyaya purusha which causes the cosmos by its mere presence. Or we could say that awyaya 'unfolds' the cosmos which is caused by kshara and akshara. Awyaya does not 'do' anything, but even so it becomes a cause for the accomplishment of the work of akshara.

Dwai imau purushau loke
Ksharas ch Akshara eva cha
Ksharah sarvani bhootani
Kutah-stho
Akshara uchhyate

Uttamah purushas tv anyah
Paramaety udhaharatah
Yo loka trayam avishya
Bibharty Awyaya ishvarah

SHRIMAD BHAGWAD GEETA 15:16-17

There are two types of fundamental entities — *kshara,* from which all matter and material entities evolve, and *akshara* is the entity that resides in every individual without any modification or distortion. Purusha is something different. It is the pre-eminent entity. It is called the supreme atma. This factor resides in all the three lokas. The entire cosmos is maintained by this factor called awyaya. This is Ishwara, the regulator of the universe.

The Five Facets of Akshara

THE FIVE FACETS OF AKSHARA ARE VEDA, YAJNYA, praja, loka and dharma. We have already looked at the five akshara purushas of Brahma, Vishnu, Indra, agni and soma. Of these, Brahma is permeated with veda, Vishnu with yajnya, Indra with praja, agni with loka and soma with dharma. We shall be explaining the terms veda, yajnya, praja, loka and dharma briefly in this chapter, and later we shall revisit these terms for a detailed explanation. In fact, each one is a subject for exhaustive study. At this point let us merely note that every 'individual' is an aggregate of these five facets of akshara.

The four vedas of rik veda, yajur veda, sama veda and atharva veda are natural phenomena, and the written works which deal with these phenomena are called by their respective names — for example, *Rik Veda* explains the occurrence of the veda known as rik.

Supraphysical energy spreads out in all directions from the heart of an 'individual' — that is, from the centre of that particular 'entity'. Agni is the supraphysical energy which radiates out from the centre of prithwi (the earth) in all directions. Several layers of this supraphysical energy 'wrap' the earth as agni is stacked, layer upon layer, in the same manner as one layer of bricks is laid over another in the construction of a wall. Each of these 'layers' or 'stacks' of

supraphysical energy is called a *stoma*. Agni, emanating from the centre of the earth, travels up to 21 stomas in distance and is known as *agni annada*. The wak which is collated by this supraphysical energy of agni constitutes rik veda, which defines the contours of a form, thus rendering its 'body' identifiable.

Mana, prana and wak are the three dimensions of every 'individual'. The substance in an 'entity' is the contribution of wak; mana is responsible for making that entity aware; and Prana vests it with its functions.[72] The wak collated by annada agni is regarded as rik veda and rik denotes a 'figure', which is a 'body', an outline or a form and which contains the 'content'. In essence, such a figure is a mass permeated with *annada,* a specific class of agni.

The process of creation is a continuous interaction of supraphysical energies, in which some behave like 'fuel' and others behave like 'fire' in relation to the 'fuel'. As we note elsewhere, *anna* and annada are two types of supraphysical energy and individual. Those which are consumed are anna (the literal meaning of anna is 'food' or 'grain'). This term connotes a class of agni (supraphysical energy) which is a consumable — the 'fuel', in other words. Another class of agni consumes the 'food' and is known as annada, the consumer or 'fire'. Agni produces a mass or accumulation of energies in the physical universe.

The transformation of one type of energy to another takes place frequently in the physical universe. As we know, water flows from a higher level to a lower level. The 'mass' of water possesses potential energy while at a higher level, but this potential energy is transformed into kinetic energy when it flows to the lower level. Likewise, when electrical energy is supplied to the thin filament of an electric light bulb, the result is light and heat. A similar process takes place in the case of

supraphysical energies. Rik veda is a manifestation of the agni which has assumed the form of wak, and is accessible by the agni which consumes anna.

Aditya is the originating point of this wak. A powerful impulse of offering of soma in Brahma is generated within it, and its exterior is radiant like the tip of a flame. It is endowed with a luminosity which is somewhat sparse and gentle, rather than being thick and dense. It has the capacity to penetrate, possesses extremely subtle components and is permeated with *prana agni*. Radiating from aditya, it acquires the structure of sama veda.

Wak manifests two contradictory properties. On the one hand it is continuously on the move between agni and soma, and on the other it is stable and stationary. This is a result of yaju, which is a harmonious reconciliation of two contradictory facets within one individual. This becomes evident in one of two ways: the form of yaju which is in motion is called wayu (an airstream or current of air); while the stable, stationary aspect of yaju is akasha (space or the sky). The Sanskrit word 'yaju' has two syllables: *ya*(*t*) and *ju*. Yat is the sky and ju is air. The sandhi (combination) of the two is what is known as yajju (in the enigmatic and indirect language of the seer-scientists, the middle 'j' is eliminated so that it becomes 'yaju'). All yajnyas, prajas, lokas and dharmas spring from this yaju. All these words have a meaning in common usage, but each is a technical term with profound connotations and nuances.

Yajur veda is divided into the two classifications of tranquil and turbulent. These three vedas — namely, the basic tattwa which is explained in the written material bearing that name — have the outer surface of agni, wayu and aditya respectively, and essentially stem from agni. Because they have agni as a common component, they are considered to be somewhat

different from atharva veda which is permeated with soma. Sometimes the seer-scientists refer to the three vedas which have agni as a common component as the 'triple vedas'. This has led Western commentators and 'experts', who are not conversant with the scientific aspect of the *Vedas*, to the erroneous conclusion that the *Atharva Veda* is a later addition to the three 'books' of *Rik Veda*, *Yajur Veda* and *Sama Veda*. It should also be noted that the *Vedas* are not 'books' as we understand the word, but collections of mantras explaining the phenomenon called 'veda'.[73]

As noted earlier, agni radiates up to 21 stomas from the centre of prithwi (the earth). Atharva veda is located beyond this up to 33 stomas and is permeated with soma.[74] The four vedas of rik, yaju, sama and atharva (which are infused with wak) design the composition of Brahma, and all individuals obtain support and reinforcement from them. Once Brahma, the foundation, is laid and they secure the base, an individual comes into existence. This is the reason why the *Vedas* decree that "Brahma is the foundation of all."[75] The entire physical universe is founded in the three vedas of rik, yaju and sama.

The four vedas confirm the completion of yajnya, a process by which Brahma is divided into the three dimensions of uktha, *arka* and *asheeti*. It may be easier to comprehend these three dimensions of a single entity as similar to the three dimensions of a circle: it has a centre, a circumference and the 'content' encased within the contours of the circumference. The 'content' is in the nature of rays radiating out from the centre. The heart or centre of Brahma is called uktha, which is in the nature of a knot from where energies known as arkas radiate outwards. In other words, uktha is the base from which arka springs, wandering around in search of anna (consumables). Arka as annada (consumer) roams around

pranas, pulling them forcibly and absorbing them, before returning to the atma where its restlessness subsides.

Asheeti is anna (a consumable energy) which enters prana and becomes urka, known as rasa ('juice'). When the cycle is complete, arka changes its form and acquires that of prana; in turn, prana disappears into uktha, and thus we see how one form of supraphysical energy is transformed into another, akin to the transformation of one form of physical energy into another. This is similar to the manner in which the sun 'sucks' water from the ocean to make clouds, transforming it into rains which shower the earth. The earth receives this water, which then flows into the rivers and ultimately merges with the oceans. A type of energy known as arka springs from the centre or uktha, radiating and absorbing prana. Asheeti is the name for a group of supraphysical energies which is absorbed by arka. These energies penetrate the prana and become rasa, or a type of supraphysical 'juice' known as urka. This cyclical process of the uktha–arka–asheeti transition is yajnya.

This process of yajnya is continuous and permeates everywhere,[76] as the supraphysical energies of anna and arka are transformed into one another. The yajnya which is operational in Brahma is called Vishnu, and this is the sustaining, life-giving force of the existing universe. As long as this yajnya continues in atma, an individual survives — a person remains alive. When yajnya is extinguished, an individual is destroyed — the person dies.

The yajnya in Brahma causes modifications in yajur veda, and all the substances born of those modifications are known as praja, which is a 'descendant', an 'offspring', a 'progeny'. It is all that is created. In all physical creations the process begins with a 'seed', which is nourished and energised, which grows and is transformed into 'matter'. Similarly, praja has three classifications: *beeja* (seed), deva (supraphysical energy),

and bhoota (a gross element comprising matter). The five bhootas or basic, gross elements are akasha (the sky or space), wayu (airstream), teja (the sun), jala (water) and prithwi (the earth). The five devas (also called devatas) are agni, wayu, aditya, *chandra* and *varuna*.[77] There are also five afflictions: ignorance, lack of self-esteem, attachment, envy and arrogance. These are 'seeds' from which the consequences of all actions emanate.

The collective of five 'seeds' is the causal body; the collective of five devas is the subtle body; and the collective of five bhootas is the gross body. These 15 aspects cover Indra — who is the atma in relation to these bodies — from all sides. The 15 aspects or dimensions are known as kalas (a kala projects a single integral reality as divided or multiple). They are positioned around Indra as the 16th dimension (pervading atma), which they obscure or veil. Indra rules over and regulates praja.

Every 'individual' has a 'body', but in fact, the 'body' we see is just the gross body, beneath which are two more layers: the causal 'body' and the subtle 'body'. The sookshma shareer or *antarloka* (subtle, non-physical body) is that in which the jeeva functions in the astrophysical plane (inner world). Jeeva can be visualised as the Self, the 'I' in every person.[78] The collective of causal, subtle and gross bodies includes *pranamaya kosha* (the pranic sheath), *manomaya kosha* (the instinctive-intellectual sheath) and *vijnanamaya kosha* (the cognitive sheath). The pranic sheath drops off at the time of death of the physical body.

Praja makes a 'body' as a kind of container, which Indra uses by employing the sense organs and the organs of action. (The Sanskrit word for 'organ' is indriya — 'that which has evolved from Indra'.) Loka is the bhava (state)[79] which praja attains by acquiring name, form and functions, and it is also

known as *bhuvana* (house). As this world of ours is sometimes viewed as the 'house' in which we live, the term bhuvana is often translated as 'world'. We come across references to seven 'worlds', to three 'worlds — and to a 'single world' known as *jana loka*.

The seven worlds or bhuvanas are *bhu*, *bhuvah*, *swaha*, *mahah*, *janah*, *tapah* and *satya*. The 'three worlds' consist of prithwi (the earth), *dyau* (the solar system) and antariksha (interspace). Mana, prana, wak, wayu, teja, *apa* and anna constitute jana loka, and all material entities are an expression of one of these components. Some seer-scientists are of the view that the three lokas comprise the sun, the moon and the earth; the last of these is the abode of sentient beings; the sun is the location of the devas and the supraphysical energies; and the moon is the location of the *pitaras* (the supraphysical energies associated with ancestors).[80] Atma appears to be roaming in one or other of these three lokas; it does not go and, therefore, cannot reside anywhere else. Changes in the condition of a substance, or an alteration in a state are described as the transit from one loka to another.

All the organs of an individual — that is, the organs of action and the sense organs — become functional owing to a class of supraphysical energy known as veerya. (The English translation of veerya is 'sperm', but this is not exact and comprehensive. It will be easier for readers to visualise the function of veerya by viewing it as the supraphysical energy basic to genes. As an organism grows and develops, its collection of genes provides a blueprint which determines its traits and characteristics. Genes operate at the physical level, while veerya functions at the supraphysical level.)

Differences in the dharmas (traits) of energies belonging to this class of supraphysical energy cause four characteristics to arise. These are *divya, veera, pashu* and *mrita*. Veerya is the

specific supraphysical energy which gives rise to these respective traits. Divya (also called *brahma veerya*) produces peaceful traits. Veera (or *kshatra veerya*) gives rise to vigour and enthusiasm. (*Kshatra* generates the impulse of giving shelter to those in distress; it produces the strength needed to offer protection.) In the pashu (or *vit veerya*) disposition one can find 'peace', but it is bereft of self-esteem. Vit veerya can be discerned when there is an inability to protect oneself, so that one needs to seek protection from others. *Mrita veerya* is that which cannot be activated.

The first three categories of veerya are responsible for life and vitality, whereas the fourth capacity reveals a loss of the ability to survive. This fourth kind of veerya exists always in a state of fear and is quickly dissipated. It is also known as *shoodra veerya*. The word 'shoodra' has three syllables: *shoo, ud* and *dra*. 'Shoo' indicates haste; 'ud' means 'fall' or 'drop'; and 'dra' means 'melting'. The veerya which melts or dissipates quickly is therefore called shoodra, and someone with shoodra veerya is known as a shoodra.[81]

Some thinkers express it thus: the peaceful disposition called brahma veerya is that in which mind, matter and energy are in harmony. Kshatra veerya exists where there is turbulence — that is, where the mind and energy are in an aggressive mode. Vit veerya exists where peace is accompanied by prosperity, but also by a tinge of fear; in this instance, mind, matter and energy appear to be operating with some caution.

At this stage, we need to pause for a short while to understand the term *chhanda*, which is translated as 'metre'. Chhanda is metre in the sense that metre is a basic pattern of beats in a piece of music. In the technical sense in which chhanda is used in the *Vedas*, it defines the contours within which an individual is situated. A chhanda in poetry is a rhythm or a scheme determined by the number and length of feet in

a line; a chhanda in the supraphysical discourse is the scheme within which supraphysical energies are organised to make an individual. So, as metre makes a verse, chhanda defines the individual.

In a piece of music, the metrical organisation is what makes it music; without metre it is merely sound. Similarly, chhanda gives meaning and distinctiveness to an individual, without whose presence it is merely a collection of 'susbstances'.

Thus, chhanda is a measure of supraphysical energy, a container which determines its contour; it is the frame in which a picture is situated. Supraphysical energies organised in different chhandas have different names. Brahma, kshatra and vit veerya are regulated by the three chhandas of agni, wayu and aditya. These three metres are responsible for regulating them so that they do not become dislocated, displaced or scattered.

Our fourth veerya, shoodra veerya, is different from the other three in that it exists in a state where there is no control. It can cause the other three veeryas to suddenly be displaced and become unable to discharge any specific function, even though they are present. In other words, shoodra veerya is that circumstance in which brahma, kshatra and vit veerya are present but inactive.

Four dharmas (traits) flow from these four veeryas. The word 'dharma' has been translated incorrectly as 'religion'; its actual meaning is the supporting principle of the whole of creation. Every individual in the universe has his, her or its dharma. For example, it is the dharma of fire to burn and to rise, while it is the dharma of water to soak and to flow downwards. For our purposes here, we use the word 'trait' to indicate the functionality of dharma. These four veeryas are four dharmas, and the entire world is pervaded with them.

We have endeavoured in this chapter to explain the five facets of akshara, namely veda, yajnya, praja, loka and dharma, and to indicate the ways in which they sustain and control the operations of the universe. These five dimensions of akshara are known as the five akshara purushas, and in their turn they stem from the five devas of Brahma, Vishnu, Indra, agni and soma.

Yat tat adreshyam agrahyam agotram avarnam
Achakshushrotram tat apani padam
Nityam vibhuh sarvagatam sukoham
Tat awyayam yad bhoot yonim paripashyanti dhun

MUNDAKA UPANISHAD 2:1:6

Awyaya is that which is invisible, beyond the range of all the organs of knowledge, beyond the range of organs of action, without features, without eye or ears. It is eternal, all-pervasive, extremely subtle. That (awyaya) is the ultimate source of all creation. The discriminating and wise person sees it everywhere.

uttamah purusha tav anyah
paramatmety udahrtah
yo loka trayam avishya
bibharty avyaa isvarah.

GEETA 15:17

The pre-eminent purusha is something different (from kshara and akshara). It permeates all the three worlds and carries them all along. It is the regulator and controller of the cosmos.

The Contours, Composition and Significance of Awyaya

WE HAVE NOTED EARLIER THAT KSHARA PURUSHA IS the material cause of the cosmos and akshara purusha is the incidental cause. Awyaya purusha is different from either of these two, in that it is neither cause nor effect. Yet although any causal relationship is denied in awyaya, we find a statement in *Srimad Bhagwad Geeta* to the effect that awyaya is the cause of the whole universe. In the following discussion we shall attempt to show how awyaya, in an atypical way, becomes the cause of all creation even though it is not the cause in the ordinary sense of the word, and no modifications occur in it.

Let us start by classifying causes into two types. The first category of causes is that which gives rise to an 'effect', comprising the material which makes the consequent product. The second type, in contrast, produces no obvious effect. Awyaya is in this second category, since it has the potential to reveal the existence of the universe by its sheer presence.

For example, my eyes are the cause and the effect is my being able to see an object. The sun or a lamp does not see an object. However, as long as the light travelling from the sun or emitting from a lamp does not join with my eyes in the act of seeing, the 'effect' of seeing an object does not take place. The sun or lamp are not causal factors in the existence of the object; they would continue to emit light irrespective

of whether a particular object is at a particular location or not, and whether a particular person sees that object or not. Thus they do not perform any specific 'action' in the fact of my seeing the object; but even without action, they cause the object to be seen.

Similarly, awyaya remains aloof and does not perform any specific action in relation to akshara. Despite this, by its sheer presence it becomes a cause in the operations of akshara. Vested with the property of light, our eyes enable us to see. Similarly, vested with awyaya, akshara has the power and potential to give rise ('give birth', we might say) to all effects (creation). Awyaya is another form of paratpara, and can actually be considered as indistinguishable from paratpara. As noted earlier, paratpara is that state of rasa[82] in which all balas are incorporated. Among these balas is *maya bala*, which is larger and more powerful than all other balas. Rasa which is covered by maya bala (perceived as distinct from other rasas) is depicted as awyaya.

Maya[83] is that which puts limits around the limitless. Rasa invested with bala is not confined by the factors of time, region and direction; but it becomes limited when confined by maya bala. All other balas arise in that limiting maya bala, are sustained there and ultimately dissolved in it. Therefore awyaya, being indistinguishable from paratpara and vested with all balas, is perceived to possess all dharmas (traits). This is why the *Upanishads* describe awyaya as an individual possessing all dharmas and all attributes.

THE FIVE CONSTITUENTS OF AWYAYA

Awyaya has five components — ananda, vijnana, mana, prana and wak. The layering of bala in awyaya takes place in two ways: internal and external. The process by which maya

fastens together various balas in the form of knots at the heart of an individual occurs by the layering of one layer of bala over another, much in the same way as bricks are laid on top of each other to form a wall.

These balas are of two types. One class comprises balas from which creation takes place, known as balas of the avidya category. (Avidya is the tendency towards ignorance or nescience.) This structure is formed when one 'knot' of bala is tied to another in a process which continues unabated. The other type of bala unties these knots located in the heart, and this is included in the category called *vidya bala*. (Vidya is often translated as 'knowledge'; we look into its technical meaning in the chapter "What Happens to Atma after Death?") The layers of avidya bala constitute the external coating, while the collection of vidya balas is the internal coating. These internal and external coatings take place in the mana (mind) of awyaya, and mana's importance is indicated by the aphorism that "This mana is limitless. For sure, this is prajapati's mana."[84] When ignorance is uprooted and knowledge is uncovered in the mind, Self-illumination takes place. It is at this stage that the vijnana factor arises. All material entities and sentient beings evolve from the supraphysical energies of vijnana.[85]

As the process of internal coating begins to operate, all the balas which cover it are removed. Rasa becomes dominant and a new disposition, called ananda, arises. In contrast, external coating on the mind shrouds the power of Self-illumination, and a prana arises in the form of veerya. More layers of external coating cause the emergence of wak, as the source of all material substances. Knots are tied over knots as the process of external coating continues unchecked, and this gives birth to grosser and grosser forms. (A figure is regarded as 'gross' in comparison to another when it is easier to discern. Thus, prana is more gross than the mind, and wak is more

gross than prana. In modern parlance, we might say that energy is relatively easy to detect compared to the mind, and matter is easier to recognise than energy.)

The layers of bala are punctured when the internal coating occurs and the process of untying the knots begins. At this stage, those balas which have the potential of creation begin to unwind. As they are dissolved, rasa matures and develops. This is akin to the 'maturing' of a juice or some other form of liquid which has been sealed within a container and left for a long period of time. The first stage of the development of rasa is vijnana; as rasa continues to develop, ananda arises. This indicates that vijnana is subtler than mana (the mind), but ananda is subtler still. Subtlety is induced wherever the presence of bala is reduced.

As mentioned earlier, the five components of awyaya are ananda, vijnana, mana, prana and wak. Ananda is recognised as the subtlest of all. Since the presence of bala is minimal in that state, rasa dominates ananda. Wak is very 'thick' because of the abundance of bala which dominates it. It is bereft of ananda, and rasa remains veiled. The mind (mana) is neither too subtle nor too obvious ('thick'). It acquires the forms of both knowledge and action and is permeated with desires.

CREATION AND EMANCIPATION

Mana becomes a cause of creation when it associates with prana and wak. We could liken this to creation being a consequence of the interaction of mind, energy and matter. Some modern scientists are of the view that consciousness combines with matter (another form of energy) to create objects. When mana associates with vijnana and ananda, it gives rise to numerous bhavas (dispositions) in wak; and vijnana and

ananda set in motion the process of untying the knots of bala located in the heart of an individual. When this process has advanced considerably, prana and wak become contributory causes in the pursuit of emancipation, the endeavour to become liberated from the knots of bala accelerates, and efforts to become free of the cycle of coming into this world and going from it (ie. birth and death) gain momentum. No endeavour towards 'freedom' of the atma can be accomplished without prana and wak. Thus mana, in association with prana and wak, becomes a cause of bringing individuals into this world and, in association with vijnana and ananda, of emancipation from the endless cycle of worldly existence. Bhagwan Krishna explains this progression unambiguously to Arjuna in the *Geeta*.[86]

In summary, awyaya's five components of ananda, vijnana, mana, prana and wak enable it to become the principal cause of creation in the universe as well as liberation of the individuals which inhabit it.

THE THREE SUBSTRATA OF AWYAYA

Awyaya is perceived in three ways in accordance with its three substrata, which are *adhidaivata*, *adhyatma* and *adhibhoota*. Our readers, especially those who have read *Before the Beginning and After the End*, are familiar with the terms deva, atma and bhoota. In a very broad sense, deva (or devata) stands for 'supraphysical energy', both in its abstract as well as personified form. Bhoota stands for 'matter', and more specifically for the fine substratum of material or gross objects. Atma stands for 'Self'. *Adhi* is used as a prefix to verbs and nouns as well as a separable adverb or proposition. Adhidaivata covers the genre of supraphysical energy, while individuals related to this genre are *adhidaivika*. In other

words, an individual known as adhidaivika springs from individuals in the adhidaivata category. All individuals pertaining to and springing from matter are *adhibhautik*. Every entity related to atma falls into the *adhyatmik* category.

Following the rules of Sanskrit grammar, these three terms of adhidaivata, adhyatma and adhibhoota are derived from deva, atma and bhoota respectively. The technical nuances of these three terms need to be understood before we proceed, and this involves overcoming the misunderstandings caused by accepted translations of these words. The word 'adhidaivika' is commonly translated as "relating to or proceeding from gods or from spirits or proceeding from the influence of the atmosphere or planets, proceeding from divine or supernatural agencies."[87] As distinct from this, adhyatmik is translated as "relating to the soul or the Supreme Spirit", and adhibhautik as "related to created beings, elementary or derived from primitive elements or material."[88] The word 'adhyatmik' has been translated by many scholars as "spiritual", and this has resulted in a commonly accepted notion of the East as the home of spirituality and the West as the home of materialism.

This arbitrary division of the world into two categories is not accidental. The reasons behind this deliberate labelling and the damage it has done to the human personality, both in the East and the West, is a subject of separate study. For our purposes here, it is sufficient to clarify that adhibhautik relates to matter — the word bhoota means 'matter'. *Adhibhautik vijnana* means 'sciences of matter', which include what we call physics, chemistry, biology, geology and so on. We translate adhyatmik as 'physical', and this term includes the person — the 'I' — as a whole, namely body, mind, intellect and atma or Self.[89] (The word adhyatma relates to atma, an integral part of the whole person.) We translate

adhidaivika as 'supraphysical', which relates to forces in the cosmos which are beyond the limits of detection by the tools of material sciences. The Vedic sciences explain the close links between the adhyatmik (physical) and adhidaivika (supraphysical) energies, and thus a study of adhyatmik helps us to gain glimpses of adhidaivika. (We could have used the term 'natural' for adhyatmik but, had we done so, the term adhidaivika would have been seen as 'supernatural' or 'supranatural'. Material science, then, would have earned the odious label of 'unnatural'.) In fact, adhyatmik (the physical) is the key to a progression from material to physical and from physical to supraphysical.

Adhibhoota is the material dimension; adhyatma is the physical dimension in which supraphysical factors are also operative; and adhidaivata is the supraphysical dimension, which is the 'body' of Ishwara. Within that body, the three purushas, along with numerous modifications, regulate and run the entire cosmos and several universes within it. A universe is comprised of a vast sphere created by awyaya with the help of its maya bala. Awyaya purusha, with its five components, is located at the heart or centre of Ishwara's 'body'. Its rays radiate throughout the entire field of the cosmos while remaining linked to the centre, much as the sun's rays also function. This awyaya is known as *paroraja*, and it is the first prajapati; another name for it is *maheshwara*.

SWAYAMBHOO BRAHMA: PERVADED WITH PRANA

The five awyaya components are divided into several branches within the ambit of paroraja. The rays of ananda, vijnana and so forth radiate out on all sides from the hub of the vast maya bala. It is here that prajapati (in an indivisible state) generates

mana, prana and wak. Simultaneously, Brahma — who is akshara purusha — spreads the three vedas of rik, yaju and sama in all directions throughout the cosmos. The seer-scientists express it thus: "All the lokas are within this domain. The whole universe is within it. Who can compete with Brahma...? The 33 devatas (supraphysical energies) are Brahma. Indra and prajapati are Brahma. Within Brahma the whole universe is included like a boat (on an ocean)."[90] We shall be explaining the word 'loka' in some detail a little later. In brief, at one level every loka is an autonomous universe in itself; at another, a loka is what we observe and is therefore restricted by our senses.

We have now arrived at the second prajapati, known as *swayambhoo*. This is pervaded with the supraphysical phenomenon of veda (as distinct from the books of the *Vedas* which explore and explain this phenomenon). The three vedas of rik, yaju and sama are injected into every substance by agni, wayu and aditya, which ensure the existence of that substance. Having become associated with various substances, these vedas become susceptible to human manipulation as 'individuals'. These individualised vedas are thousandfold,[91] and Indra and Vishnu are also based upon them. Engaging in a contest,[92] both Indra and Vishnu are desirous of victory but neither is ever defeated.[93] They divide the thousandfold individuals in three ways[94] and, ultimately, having failed to subdue one another, they take the support of Brahma.[95]

For a general understanding of this contest, let us take the example of a human being in whom we witness the continuous inflow as well as outflow of energy. Growth occurs when inflow is greater than outflow, as in childhood. Conversely, ageing takes place when outflow exceeds inflow. And an individual is sustained when the two are balanced. The outflowing supraphysical energy is Indra, the inflowing

supraphysical energy is Vishnu, and Brahma sustains and balances these two 'contesting' devatas.

PARMESHTHI VISHNU: PERVADED WITH APA

Brahma, with his numerous dispositions, is located in the body of an Ishwara, where Vishnu and other akshara purushas obtain his support. Aksharas arise from Brahma in much the same way as the branches of a flowering plant produce leaves, each of which represents an akshara. In this work, we are focusing on the 'branch' upon which our planet earth is located. As noted earlier, this Brahma is known as swayambhoo and is permeated with wak. Another prajapati, known as *parmeshthi*, orbits around this Brahma and is filled with apa (water).

Parmeshthi possesses the three components of *ida*, *urka* and *gau*. Ida is a supraphysical energy related to speech as well as matter. Urka is a supraphysical 'juice' which springs from the parmeshthi system; the greater its presence in an individual, the more energetic and spirited that individual becomes. Since urka emanates from the supraphysical sphere, the greater its presence, the greater is the gravitational pull of that individual towards the supraphysical sphere. This specific prana or supraphysical energy is present in all plants and vegetation on the earth, but is particularly vested in a tree known as *udumbara* (*ficus glomerata*). For this reason, this tree is used in the yajnya performed by human beings. Because this prana is also present in barley, this particular grain has a special significance in yajnya. Since supraphysical energies have no form and are not visible to human eyes, individuals and entities — in this case vegetation, plants and grains — in which this prana is present in significant measure are used as material inputs in yajnya. This is in keeping with the related interaction of interdependent supraphysical energies in nature.

Urka is often described as anna, something which is eaten or consumed. However, this understanding of the term is partial and misleading. In a body, urka is produced from anna, being the 'juice' which is extracted from things consumed. The energy that sustains the body is generated from that juice. The prana which sustains an individual is a consequence of urka, and this in its turn is a consequence of anna. Every mass or body is a product of the interaction of agni and soma. Agni is akin to Vishnu, while Indra is the source of soma. Vishnu consumes anna, strengthening a body, whereas Indra expels the energy generated by the anna that is consumed. Both of these contesting and contradictory supraphysical energies — agni and soma — are spread out over a long range around a body. The region to which they pervade is known as *sahasra*. This region of sahasra comprises 1000 supraphysical rays (sahasra is often translated as 'one thousand' in common usage). Each of these supraphysical 'rays' is called a gau, a term translated as 'cow' in daily parlance. Thirty gaus make one *ahargana*. The sphere up to which these supraphysical entities permeate is organised into 33 aharganas, accounting for 990 gaus. The remaining 10 gaus make the 34th individual or prajapati.

In a generic sense, swayambhoo brahma is akin to agni and comprises the three vedas of rik, yaju and sama. Generically speaking, parmeshthi is akin to soma and comprises atharva veda. Once again, we remind our readers that these vedas are natural phenomena, the essential tattwas which make the cosmos, and should not be confused with the texts bearing the same names. To repeat, swayambhoo comprises the three vedas of rik, yaju and sama, and this triple veda consists of agni. Parmeshthi consists of atharva veda, which comprises soma. In fact, this is the principal difference between swayambhoo and parmeshthi.

Yajnya is the interaction of supraphysical energies in which a certain genre of supraphysical energies are absorbed or consumed, while another genre of supraphysical energies is consumer or absorbent. This interaction is in the nature of burning an object in fire. The fire which consumes the object thrown or poured into it is agni, the genre which consumes. The objects which are consumed are soma. Yajnya cannot take place in the absence of either of these two ingredients. These supraphysical energies permeate the cosmos, and prithwi (the earth) is surrounded by them.

We measure heat by temperature scale — in Centigrade or Fahrenheit — distance in metres or inches, weight in pounds or kilograms. Force is measured in newtons and modern science measures work done in units called joules. One joule of work is done when the force of one newton moves one metre. Supraphysical energy is measured in units of aharganas. An individual, say the earth, is surrounded by supraphysical energies which wrap it in concentric circles. The supraphysical energy radiates from the entity on all sides and is measured in units called aharganas.

In the case of the earth, the measurement covers the distance from the earth to, say, the sun. The specific type of agni known as *rathantar agni* permeates up to 21 aharganas, from where soma permeates up to 33 aharganas. The six doors of Brahma[96] are: agni (fire), wayu (airstream), jala (water), chandrama (moon), *vidyuta* (electricity) and aditya (the sun). Since agni, wayu and aditya stem from the basic supraphysical energy of *angira*, they are known as *angiras* (the 'juice' or 'offspring' of angira.) Jala, chandrama and vidyuta stem from *bhrigu*, another genre of supraphysical energy. Atharva veda is pervaded with the three different pranas or supraphysical energies named bhrigu, angira and *atri*.

At this point we shall need to introduce the technical terms of *rit* and *satya*. Rit is that tattwa, or portion of a tattwa, which has no body and no centre or navel. In contrast, the satya portion of a tattwa possesses a body and therefore has a centre or navel. Veda is comprised of the fundamental tattwa permeated with both rit and satya. Bhrigus circulate in the rit portion of a tattwa, and angiras circulate in the satya portion. Rit and satya exist on the basis of each other. Rit pervades satya, both within and all around it. The seer-scientists express this phenomenon with the following formulation: "Rit is parmeshthi. No one can transgress rit. The ocean is located in rit and the earth is established in it. Agni is rit and aditya is satya."[97]

Apa, wayu and soma are *bhrigu pranas*. Being smooth and soft supraphysical energies with the property of greasiness, they possess the characteristic of joining or congealing individuals. They gather together and congeal substances which are watery, thin and loose, solidifying them into a mass or lump. Apa itself is often given the name 'parmeshthi'. It has four forms: *ambha*, *mareechi*, *mar* and *shraddha*. Ambha is the *apa tattwa* above the sun; mareechi is the apa tattwa found in the sun's rays; mar is the apa tattwa which is transformed into earth; and shraddha is the apa tattwa located in the moon. These apa tattwas are original, enduring, eternal and imperishable. (The apa tattwa which becomes the water we drink is not an 'element' but a compound produced through the yajnya process — the interaction of supraphysical energies for the purposes of their refinement leading to creation — and is therefore perishable.)

Wayus (airstreams) are also of four types: wayu, *matarishwa*,[98] *pawaman* and *savita*. A substantial part of apa tattwa is modified into these four forms of airstream, while the remainder, in a very small quantity, rests at the bottom

of the cosmic matrix as the bhrigu residue. This is *atharva prana*, and it becomes the underpinning of soma, wayu and apa. As a result, these three are categorised as atharva. Soma is a basic substance which has also been given the name *brahmanaspati.* It gives rise to the impulse to gain knowledge and generates a pure mind filled with a fascinating blend of love, trust and faithfulness (shraddha), faculties which emanate from the tattwa bearing that name and located in the moon or lunar system.

Angiras (originating from angira) *prana* is sharp and glowing and has three forms: agni, *yama* and aditya. These three pranas or supraphysical energies are known as mrityu and cause the disintegration and loosening of solid and hard substances, making them brittle and soft. Agni splits and divides a compound into its original component elements, while yama prevents any possible coagulation of these elements into a compound. As mentioned earlier, every individual or entity in the cosmos is a product of agni and soma. Aditya, the third type of prana originating from angira, has the propensity to expel the soma which permeates every object. This is like the expulsion of superfluous moisture from a solid substance, facilitating a return to its original state.[99]

Atri prana is filled with vidyuta (supraphysical electrical energy). It is located within a mass and destroys its transparency. This prana causes rays of light, which radiate from an illuminating source, to be returned after they hit a solid mass. In other words, atri prana prevents light rays from entering anything solid. As a result, 'dark' rays appear to be spreading in the other part of the body of that mass. This is why the moon is described as 'the light of atri'; it shines in the glow of borrowed light. And night is known as *atreyi*, 'born of atri'. Since bhrigu, angira and atri pranas arise from atharva, they are included in the term 'atharva'.

Parmeshthi prajapati is filled with apa, wayu and soma, and many scholars call it 'Vishnu'. Varuna is a supraphysical energy related to water or the quality of liquidity. This specific type of soma circles around parmeshthi prajapati and is also filled with apa. It has three concentric circles around it, of which bhrigu is the first in the sense that it is the nearest to the individual. Savita comes next, in the company of *angira brihaspati*. At the conjunction of the solar and parmeshthi regions is a field of supraphysical energy called brihaspati. This is different from the planet bearing that name, which is known to astronomers as Jupiter. A specific type of soma, called *vaja*, is located in this field, and this generates enthusiasm in an individual and is present in considerable measure in horses. Thus in Sanskrit the horse is called a *vajee*, 'that which is endowed with vaja'.

Indra (also called *soorya* or the sun) comes third. Bhrigu is accompanied by brahmanaspati and is illustrated as a swan flying through the air, because bhrigu travels on airstreams. It is also known as *varuni* — 'the offspring of varuna'.

Parmeshthi divides apa into two in a process described as 'conceiving' by apa due to the injection of the 'sperm' of parmeshthi. Sweet and saltish apas (water) are the two 'offspring' of this 'conception'. When the 'sperm' mixes with apa it becomes bhrigu, and is then modified into wayu, matarishwa, pawaman and savita. These are all classes of wayu (air/wind). That which is not subjected to modification and which remains in a very small quantity is atharva. It becomes another Brahma like parmeshthi. It is filled with apa, and others such as brahmanaspati and so forth move around it. As these individuals are continuously floating in the cosmos, brahmanaspati is described by the seer-scientists as the first co-traveller of parmeshthi. Varuna is the second; some consider that aditya (a particular form of the sun) and yama

originate from the 'essence' of the ingredients of varuna. According to this viewpoint, *aditya soorya* rotates around varuna, as expressed in the formulation that "varuna paves the path for the sun."[100]

TAKING A CLOSER LOOK AT THE SUN

Swayambhoo is Brahma filled with prana, and parmeshthi is Vishnu filled with apa. Similarly, soorya (the sun) is Indra permeated with wak. Soorya has three components: the first is the solar system known as dyau loka, the second is that called parmeshthi and the third is that called swayambhoo. Antariksha (interspace) exists between the earth and the sun. The interspace around swayambhoo is filled with soma, and this is also referred to as dyau loka.

That which comprises all that radiates from the sun and exists around it is considered to be the first 'universe'. The second 'universe' is that which surrounds parmeshthi, and the third 'universe' surrounds swayambhoo. The *Atharva Veda* text refers to these three 'universes' when it asks about the prajapati that gives birth to the upper, middle and lower universes.[101] These descriptions appear to be relative to individuals on the earth and indicate the farthest (upper), the nearest (lower) and that which is situated in between the two (middle).

Agni rotates around the sun, taking the form of angira and becoming known as prithwi (the earth). This is expressed by the seer-scientists as: "O agni, you are the first angira."[102] Agni, yama and aditya are various forms of angira. Soma rotates around the earth and is known as chandrama (the moon). In the *shrutis* it is said that: "This king soma is (the food) of the devas."[103]

The entire kshara creation — the perishable part of the cosmos — is regulated by the five akshara purushas of

Brahma, Vishnu, Indra, agni and soma. These in turn take the support of *paroraja awyaya* in what is described as the highest level in the discernible matrix, known as *satya loka*. This comprises the spheres of supraphysical rays radiating from swayambhoo prajapati and filled with prana, wak and veda. This wak is divided into the three agnis of *mahoktha*, *mahavrata* and yaju, the last of which is dominant. This yaju comprises motion, stillness and ananda, and is called *paramakasha* (the supreme akasha).

The middle loka is known as jana and is born of the sphere of rays emanating from parmeshthi filled with atharva. It is permeated with brahmananda. Atharva, the 'chief' of this loka, is divided into apa, wayu and soma. Apa is dominant in this arrangement and is therefore described as the 'ocean of ananda'. This ocean consists of wayu (currents of air) because apa tattwa takes the form of airstreams here. That portion of the ocean where the sun's rays can penetrate is called *vena*; beyond that there is the utter darkness which we observe when we attempt to penetrate akasha (space).

Swarga is the first of the three lokas made from rays of light radiating from soorya (the sun). Permeated with brahmananda, it has *vasu*, rudra and aditya as its 'chieftains'. Aditya is the dominant supraphysical energy of the three in this arrangement and thus ananda is sharp and lustrous. This swarga has three divisions: the first, the middle and the best. Each of these lokas has three tiers. We live on prithwi (planet earth); the sun is dyau, and the interspace between the two is antariksha. This is the first three-tier world, collectively named *rodasi*.

The sun takes the place of the earth in the second triple world, in which parmeshthi is dyau loka and the interspace is antariksha. This middle three-tier world is called *krandasi*.

In the third three-tier world, parmeshthi takes the place of the earth, swayambhoo is the dyau loka, and the space

between the two is antariksha. This triple world has been named *samyati*.

Thus there are three prithwis (earths), three antarikshas (interspaces) and three dyau lokas (solar systems) in the three triple worlds. The seer-scientists of the *Vedas* make several references to these worlds in the form of allegorical formulations. For example, in an evocation to parmeshthi, Bhagwan Vashishtha says that it possesses three dyau lokas. There are three earths above it, and King Varuna has created this beautiful loka.[104] Rishi Angiras speaks of the three dyau lokas of savita,[105] and Bhagwan Yajnyavalkya speaks of three triple worlds.[106] He also states that it is uncertain whether or not there is a fourth loka.

Seven lokas are formed from these three triple worlds:

1. This earth of ours is agni in the form of prithwi, known as *bhoo loka*.
2. The moon, which is a variety of soma, is called *bhuvah loka*.
3. The sun, a kind of Indra, is *swar loka*.
4. Bhrigu, which is brahmanaspati, is *maha loka*.
5. *Parmeshthi Vishnu*, associated with varuna, is jana loka.
6. Between parmeshthi and swayambhoo is *tapa loka*, pervaded with Indra filled with vidyuta.
7. Brahma, filled with veda, is satya loka.

These seven lokas are grouped together and have been given the name *raja*. That which is superior to these seven lokas and is above them is paroraja (literally meaning 'that which is beyond or superior to raja'). Paroraja awyaya is the prop of all the triple worlds or seven lokas.[107]

Na twa evaham jatu nasham
Na twam name janadhipah
Na chaiva na bhavishyamah
Sarve vayam atah param

SHRIMAD BHAGWAD GEETA 2:12

Never was there a time when I (awyaya) did not exist, nor you, nor these individuals (comprising the cosmos). Nor in the future shall any of us cease to exist.

Jatasya hi dhruva mrityur
Druvam janma mritasya cha
Tasmad apariharyarthe
Na twam sochitum arhasi

SHRIMAD BHAGWAD GEETA 2:27

One that is born is sure to die (and change) and one that dies is sure to take birth again. Since this is unavoidable, there is no need to lament (when something changes or ceases to exist).

The Cosmos: The Meaning of Creation and Dissolution

AS WE HAVE SEEN EARLIER, THE FIVE AKSHARAS OF Brahma, Vishnu, Indra, soma and agni reside in the body as components of the physical arrangement of a sentient being. They manifest as *shantatma*, *mahanatma*, *vijnanatma*, *prajnanatma* and *bhootatma*. These could be visualised as five dimensions of atma, radiating as the state of utter tranquillity, evolution and progression, cognition, intelligence, and the atma which is the substratum of all material entities and individuals in the universe.

Awyaya is the foundation of these five aksharas, and is known as *viraja*. The well-known seer-scientist Bhagwan Aitereya has given us the insight that the control of a body — associated with the five aksharas — becomes the point where all supraphysical energies combine and become one.[108] *Viraja brahma* is also described as the "light of lights".[109]

The akshara and kshara purushas take the support of the mana factor of awyaya purusha, no doubt. But we can discern the process better if we envisage that they draw upon various compatible ingredients in the process of being primed to engage in the creation of the cosmos or its dissolution. They take the support of wak in accomplishing creation, and this wak is permeated with mana and charged with prana. Ananda and vijnana play a supporting role in this process, as accommodating individuals. When the moment of dissolution

arrives, and there is the expectation of emancipation, they take the support of mana which is then permeated with ananda and charged with vijnana. As associates, prana and wak offer support by extending their co-operation.

The five classifications of awyaya are the five koshas (sheaths) of annamaya kosha, pranamaya kosha, manomaya kosha, vijnanamaya kosha and anandamaya kosha. The concept of five sheaths is an important vehicle for introducing a student to the five dimensions of awyaya purusha as well as for guiding a seeker to discern various levels of subtle facets in one and the same phenomenon. As we traverse from one sheath to another, we move from the gross to the subtle domains. The body is the first gross sheath, the sheath made of anna, or food, and other material inputs. As we delve deeper we discern life and vitality, the sheath of prana. This is the domain of physical and supraphysical energies. Within this sheath is the manomaya kosha, or the sheath of perception. Beyond it is vijnanamaya kosha, the domain of cognition or the intellective sheath. And finally one arrives at anandamaya kosha, the sheath of bliss or the domain of blissfulness. These are the various aspects of awyaya, the ultimate source of creation.[110]

Srimad Bhagwad Geeta and the *Upanishads* have both pointed out that awyaya purusha is the support and substratum of all other Brahmas, which manifest as gross elements. "I (awyaya), whose form is unmanifest, have proliferated as this universe,"[111] says Krishna. "All bhootas (gross elements) are located in me. I am not located in them."[112] "As the airstream, called *mahana*, is located eternally in akasha (space), similarly all bhootas are located in me."[113]

Parama purusha is one in whom all the bhootas are to be found and who has augmented and proliferated them. It can be gained by total and unflinching *bhakti*,[114] a term which is

translated as 'devotion' but which is actually a specific type of relationship between two individuals. We can give the illustrative example before of a vehicle and a person using that vehicle. The person does not move herself or himself; only the vehicle moves. Yet at the end of the journey the person finds that (s)he has travelled a long distance. The consequence of the motion of the vehicle is reflected in the change of position of the person who has 'submitted' herself or himself totally to the movement of the vehicle. This example indicates the kind of relationship found in bhakti.

The formulation in *Tatteriya Upanishad* which states that the sheaths are positioned within each other successively indicates that they gradually become subtler and subtler. We can picture this if we think of the following 'arrangement': anna (food) generates vitality and prana (energy) in the body; this energy is reflected in the movements of mana (the mind); as the operation of the mind stabilises, vijnana (the faculties of intelligence and cognition) sharpens; and this ultimately leads to a state of ananda (unalloyed happiness). Mana, wak, prana, vijnana, ananda and others are the various kalas (dispositions) of awyaya purusha. In that limitless infinity, the impulse to manifest as multiple entities spurs intense endeavour and activity and gives rise to wak, prana, mana, vijnana and ananda. Various sheaths emerge and the process of creation starts. All individuals and entities in the cosmos which possess a name, form and function evolve from awyaya purusha, and thus it is the support and substratum of all.

In the *Bhagwad Geeta*, Bhagwan Krishna describes these purushas succinctly, stating that there are two purushas in the cosmos, one of which is kshara and the other akshara. All matter (and individuals made thereof) are kshara, while that which is stable, stationary and enduring is akshara. The *uttam* (highest) purusha is different from these two and is called

paramatma. It enters all the three worlds and carries them. "I am beyond kshara and also beyond akshara. Therefore, in the world and in the *Vedas* I am called the highest amongst purushas. The ignorant assume that I have transited from the unmanifest state into a manifest state. They say so because they do not know awyaya, my highest disposition. As I am covered by *yogamaya*, I am not illumined for everyone (I cannot be discerned by everyone). The whole universe is under a delusion because it is under the spell of three traits (sattva, rajas and tamas). Therefore they (in this universe) do not know me, who is situated beyond these three qualities."[115]

These three traits characterise all individuals in nature, and are defined as states of poise, stability and equilibrium (sattva), vigour, activity and aggression (rajas) and insipidness, inertness or viciousness (tamas). They have also been translated as the 'intelligibility principle' (sattva), the 'mutative principle' (rajas) and the 'static principle' (tamas). All individuals in the cosmos, existing at all points of time, possessing all possible traits and having all possible names, forms and functions are, in the ultimate analysis, manifestations of awyaya purusha. A shruti tells us that: "What has become past and what is going to be (the future) is all purusha."[116]

After considering two of the four dimensions of Brahma — pura (a location, town or a house) and purusha — let us now look at paratpara, the third dimension. As stated earlier, kshara purusha is described as the *awara* (lower) Brahma, akshara purusha as the *paravara* (higher) Brahma, and awyaya as the *param* (highest) Brahma. But this should not be mistaken for a hierarchical order or arrangement. They are indicative of the three states of Brahma, which we could describe as the lower, higher and supreme states of Brahma. There is yet another Brahma which is higher than awyaya and is given the name 'paratpara' to signify its all-pervasiveness.

Kshara purusha is permeated with all its modifications, and akshara purusha pervades all kshara purushas. Awyaya, the highest of the purushas, permeates akshara purusha, while that which pervades awyaya purusha is paratpara. Although awyaya is more pervasive than akshara, maya bala limits it within the confines of direction, region, time and numbers; it is thus limited by the properties flowing from these factors.

There are innumerable balas in rasa, yet it (rasa) cannot be subjected to any limiting traits because of its limitlessness. This could be likened to a cinema screen across which numerous scenes come and go; the screen itself is confined to a limited space, but the flow of film continues and is not obstructed by that limitation. A specific rasa called paratpara is discerned as limitless and endless because it is not impinged upon by the limitations of direction, region or time. That is why the shrutis describe it as "incomparable".[117] Paratpara has also been extolled in other mantras which state that Brahma is one and unique, without a second (of that category).[118] Its limitlessness means that paratpara cannot be called a 'purusha'. As stated earlier, purusha is that which resides in a pura (a location, town or a house). Therefore, purusha is confined within the limits of a pura, whereas paratpara does not deem any pura to be its place of residence.

There is a certain similarity between paratpara and purusha by virtue of the presence of all types of bala. But there is also a significant dissimilarity. In purusha, these balas are entwined with each other, whereas in the paratpara state the balas are simply there, as if floating around, without any links or association with each other. The balas in purusha are in what is known as a *chiti* relationship, in which they are laid upon each other like the bricks in a wall. The process of creation of the cosmos begins with this laying of one bala upon another. When a bala is placed on or alongside another, the

two become tied together. Other, similarly tied balas are placed on the first tied balas to form the continuation of the process of creation. In this process, a bala is sometimes tied with a 'knot' carved out of the centre of the balas linked together in the first instance. This is known as the 'knot of the heart', and its formation is called the 'process of accretion'. A new shape emerges when balas become tied to the 'knot of the heart' formed by this process of accretion, and this is a further continuation of the process of creation. The accretion and mutual involvement of balas continue to form the universe.

These balas are of two types: those which create, and those which dissolve or disintegrate. When balas of the first type, having latent creative potential, arise (in rasa), these tend to join each other, forming knots which are initially fine and subtle. As knots are tied to previous knots, the process of accretion continues and balas multiply, gradually becoming thicker and thicker — which is indicative of the continuing process of creation.

Another type of bala then arises, which has the latent potential to splinter, disintegrate and dissolve, and sets in motion a process of disjoining the balas, of untying the knots and of splintering accumulated balas. At some stage, the knot of the heart is punctured and sliced open. This is the process of dissolution. That which was thick gradually becomes thinner and finer. This dissolution process is both natural and accomplished by human beings. It leads to emancipation without causing the destruction of the cosmos, because as one process of creation is dissolved, another process of creation spontaneously begins. While one accumulated set of balas is experiencing the process of the untying of knots, another set of balas takes its place. Hence the seer-scientists describe this process of creation as an 'unceasing flow'.

By way of illustration, let us look at the trees that abound on our planet. It is true that the trees which were standing on the surface of the earth, say, 10,000 years ago do not exist today. But in their place is the present crop of trees which we see around us. Likewise, these trees which are standing today will not be seen anywhere in a few thousand years time. Other trees will have grown by then and will be standing on the earth.

This example indicates to us both the phenomenon of change in the process of creation and the concept of emancipation. The knots which were tied among the balas thousands of years ago have been unravelled and those balas have been 'emancipated'. But the accretion and the knots of other balas are presently regulating the cosmos. These will also be emancipated at some point in time, and will be replaced by another set of balas. Thus this cycle of bondage and emancipation continues unabated, like an incessant flow.

This process of emancipation is spontaneous and enduring in the scheme of nature. However, there is another process of emancipation which is 'artificial', in the sense that it is accomplished by human beings. When a wise person is able to achieve self-realisation and to devote herself or himself to actions which transcend desires, (s)he is able to rise beyond *papa* and *punya* — acts of demerit and merit respectively. Papa, often translated as 'sin', is wrongful or wicked action, and is indicative of demerit earned through wrong-doing. Its opposite is punya: translated as holy, virtuous, good, righteous or meritorious action, punya is indicative of merit earned through right thought, word and action. In a deeper sense, papa is not an action in itself but rather the *vasana* (tendency) to live and think negatively; this tendency is deposited in our minds as a result of our own wrong actions. Such a tendency is weakened when we practise self-control for a time, and this is the path to emancipation.

As we have noted above, emancipation is the unravelling of knots between balas, especially the 'knot of the heart'. There is no situation in which balas are totally absent, because they arise and are destroyed in a continuous cycle. Rasa and bala are completely entwined as the never-changing and ever-changing principles of creation — also known as amrita and mrityu, or immortality and mortality. Balas do not cease to exist in the emancipated state. Rather, the relationships formed among balas through the process of laying one over the other and the tying of knots between one and another are dissolved. Individuals arise, and purushas come into being, when balas are linked to each other and accretion takes place. (As we discussed earlier, no such links between balas occur in the paratpara state, where instead the balas simply exist without interdependent associations. Therefore, creation does not take place in the paratpara state.)

Of the four dimensions of Brahma, pura and purusha comprise the cosmos, which is the universe. Beyond this are the other two dimensions of paratpara and nirvishesha. In the *Geeta*, the term 'I' has been used by Krishna for awyaya, the eternal dharma is paratpara, and pure ananda is nirvishesha.[119]

Paratpara has been defined as rasa permeated with bala, a state in which balas arise and float around and are split into innumerable entities. These balas cannot have any form of their own, because rasa is the source of their origin and the factor of their sustenance. Ultimately, they are dissolved into rasa. Paratpara is a state in which rasa is covered with balas. In actual fact, rasa is never found without bala, but we can engage in the intellectual exercise of imagining it without bala. If we do so, we arrive at a condition without any traits, specialties or limiting attributes, and this state is known as 'nirvishesha' ('without any specialties').

Paratpara is endowed with all functionalities, qualities and flavours, and is vested with all powers. In total contrast, nirvishesha brahma is without any such functionalities, traits or qualities and is, therefore, invisible and incapable of being grasped conceptually. Words introduce us to an individual or an object by indicating one or other of its traits, characteristics or qualities. Since nirvishesha has none of these, words are unable to define it or introduce it to us, and this is why nirvishesha brahma has been described as 'indefinable'. Generally, it is perceived as existence in its abstraction.

Nirvishesha rasa is also described as unknowable. The seer-scientists have alluded to it in the following terms: "Whom the *Vedas* are unable to define, whom Vishnu and Brahma know not and from where speech returns, unable to grasp him. He who does not know, knows (because not knowing him is to know him). [He] who knows him does not know. [The one] who is unknowable for those who know, who is knowable for those who do not know. I do not agree that he is easily knowable. [He] who is unable to know finds him knowable. He who has known him as existence has managed to know him. He who negates the impulse to know him in any specific form also manages to know him."[120]

In brief, paratpara is the limit given to the knowable individuals in the cosmos. After knowing it, nothing else remains to be known. All well-being flows from knowing paratpara, as does emancipation. Beyond paratpara is nirvishesha, which is pure unalloyed joy and which cannot be known. The joy with which we are familiar is the joy arising from sense enjoyments. This experience is followed by an intense agitation for the repetition of that experience or to relive those moments of 'happiness'. Non-fulfilment of this desire causes sorrow. In contrast, unalloyed joy is an unbroken

experience. In one sense, it can be said to give rise to a state of desirelessness because supreme bliss is attained.

Sages and seers have elucidated the state of liberation and pure joy in numerous texts, and have also spelt out the methods which can enable a seeker to attain that state. In most cases, a guru — teacher and mentor — guides a seeker in this pursuit. This state is reached as one discerns various stages of existence, from the gross to the subtle. Existence is a factor which pervades all individuals. In that sense, existence is the reality which exhibits itself as the Ultimate Truth. In the life of a stone also, Truth exhibits itself as existence, but the stone is not aware of it. Plants are a little more evolved, in that they seem to be more aware of the world outside through a certain sensitivity and responsiveness to their environment. Therefore they, as compared to stones, are more highly evolved species among the various classes of individuals. Different animals exhibit varying degrees of awareness of their external world as well as of their own emotions and feelings.

Human beings appear to comprise a class of individuals capable of reasoning and control over their emotions, and are vested with the potential to regulate and channel their energy towards Self-realisation. However, the extent of their awareness of their latent potential determines whether they have transcended the state of an exclusive preoccupation with the body, to attain the higher states. This process of awareness is accelerated by the guidance of a guru, teacher and mentor, who assists the seeker-disciple to comprehend the nature of the material, physical and supraphysical domains. This enables the seeker to understand the cosmos as well as the true nature of her or his own self.

Adhibhoota (the material) is the perishable aspect, and adhidaivata (the supraphysical) is the imperishable dimension

of existence. An understanding of these dimensions and their relationship to adhyatma (the total identity of a person) paves the pathway to the enduring joy of Self-realisation.

Esha sarvami bhootani panchabhirvyapya moortibhih
Janmaviddhi kshyayar nityam sansar yati chakravat

MANUSMRITI 12:124

That [tattwa] pervades all material entities in their five forms and constantly makes them by birth, growth and decay revolve like the wheels (of a chariot).

Namah shabda roope namo vyoma roope
Namah sparsha roope namo vayu roope
Namo roop tejorasaambho swarope
Namastesh gandhatmike bhoo swaroope
Namah stotra charmatshi jirvahya nasya
Vakpani pat payu sopastha roope
Mano buddhi ahankar chittaswaroope
Virupe namaste vibhau vishwaroope

PRAPANCHASARA TANTRA 11:53-54

Homage to you in the form of sound and space,
Homage to you in the form of touch and wind,
Homage to you whose own form is form and light, taste and water,
Homage to you in your own form as smell and earth,
Homage to you in the form of ear, skin, eye, tongue and nose, speech, hand, foot, organ of excretion and generation, mana, buddhi, ahamkara, citta,
Homage to you, the all-pervading one, who is the universe and formless.

The Material, Physical and Supraphysical Domains

LET US UNDERTAKE, ONCE AGAIN, A VERY BRIEF foray into the world of modern science. To begin with, modern science tells us that our entire visible universe is made from matter and energy and that, in contrast to matter which occupies space and has mass, energy does not occupy space and has no mass. The process began with the understanding that matter was made out of atoms; then, with the aid of better microscopes and other tools, modern scientists discovered that atoms were actually made out of tiny nuclei and electrons. Protons, neutrons and electrons were discovered and then, in the 20th century, scientists explored the property of nuclei and found that they are built of little, point-like quarks upon which various forces operate. Scientists have also come to view the distinction between matter and forces as somewhat artificial. Particles can absorb and emit other particles, yet which is matter and which is a force depends on the player's position. These forces include gravity, the electromagnetic force, the weak force manifested in certain kinds of radioactivity, and the strong force underlying the nuclear force which holds neutrons and protons together in the atomic nucleus.

It has also been discovered that the electron is neither a particle nor a wave, but that it is sometimes a particle and at other times a wave. So it could be said that, ultimately, all

matter is composed of energy which, as we know, comes in different forms, including mechanical, heat, chemical and electrical energy. Energy can also be transformed from one kind to another.

Modern scientists tell us that our universe — or at least its most recent incarnation — is some 15 to 20 billion years old. According to them, this is the time lag since a remarkable explosive event they have called the 'Big Bang'. They have chosen to exclude exploration of anything before this alleged event; firstly, because they see such investigation as lacking practical relevance and, secondly, because modern science has reached a state of uncertainty with regard to further exploration.

As we explain in this work, the *Vedas* explore the cosmos in a fundamentally different manner from that outlined in the paragraphs above. For the purposes of this chapter, it will suffice to keep in mind that the seer-scientists view the cosmos as consisting of individuals, all of which are an aggregate of name, form and functions. From the smallest unit, such as an electron or quark, to the most massive of entities — all are individuals. And these individuals unite to create new ones, or 'splinter' into different individuals.

According to the seer-scientists of the *Vedas*, the cosmos is composed of matter, energy and supraphysical energies; these last transmigrate from one form to another, and we observe and experience them through their functions. The material dimensions of an individual are composed of five mahabhootas (basic, gross elements). In addition to these material components, an individual is also vested with atma, and the material domain combined with atma makes the domain described as adhyatmik.

We are faced with a problem here: how do we describe this term in English? For there is both a material and a spiritual

dimension to adhyatmik. While these two are somewhat distant (if not in outright contradiction) at the conceptual level, in the adhyatmik realm the material dimension and atma are totally integrated. So what should we call it? Spiritual? No, because spiritual is defined as something to do with the spirit or the soul. At best, a spiritual label would be incomplete and confusing, because adhyatmik includes both the material and what the modern or Western mind calls 'spirit'.

It should be noted that spirit is not an equivalent of atma. However, to call it 'natural' would be restrictive and incorrect. In Sanskrit, the term 'prakriti' — which the word 'nature' describes — is the generative principle. It is different from and complementary to purusha, the witness to the generative process. In fact, at one level it fuses into and is conceptually close to atma. The term 'supernatural' would convey something miraculous or bizarre, and would render it unreal; but it is very real. This is why we have extended the meaning of the term 'physical' to distinguish it from the 'material', and we use the term 'physical' to convey the sense of adhyatma. That which is related to adhyatma is adhyatmik. We have reserved the term 'supraphysical' for the third category, adhidaivik, which has been translated by Western commentators as "proceeding from gods or spirits", a definition which distorts the sense of Vedic science. This chapter seeks to take us into these domains in some detail.

The sun, the moon and parmeshthi are inanimate individuals. Numerous inanimate entities are born from other inanimate entities, and all the individuals present in these entities should be assumed to be material.

In the supraphysical universe, a group of individuals is known as Ishwara, who is seen to possess a round body because all his limbs are whole and complete. (Although Ishwara is perceived both in masculine and feminine

manifestation, we are using the term 'he' for the sake of convenience.) His powers and energies flow in all directions and operate with equal efficacy. Shruti, the *Veda Mantra*, underlines the fact that his limbs and senses work in all directions without any constraints or difficulties.[121] There is no one greater than or superior to him. Just as a tree remains settled and immobile in one place, so does Ishwara exist alone in dyau loka (our solar system). Ishwara allows everything (in this cosmos) to be full and complete.[122]

All living beings born in entities like the earth, which are therefore parts of Ishwara, are born from half of the atma and thus are able to operate with their organs facing in one direction only. For example, our eyes, nose, hands and so forth extend forwards from the front of our body; they do not expand and grow towards the back. (It is said this is why we have longish bodies rather than a round one like Ishwara.) An individual's sense of sorrow arises from the fact that (s)he is equipped with only a half-limbed and incomplete atma, and (s)he desires a mate in order to achieve a sense of completeness. The ability to 'worship' Ishwara, who is a manifestation of the complete atma, is gained only when a person becomes complete after accomplishing union with her or his counterpart. In various Vedic ceremonies, a man becomes eligible to perform a yajnya[123] only with his wife, having achieved union with his female companion.

ATMA AND ITS VARIANTS

Atma also develops differentiation in accordance with the different purushas with which it is associated. The base of all atmas is *chitta*, the source of all consciousness, which is named *chidatma* by combining 'chit' with 'atma'.[124] We have noted elsewhere that awyaya has the five components of ananda,

vijnana, mana, prana and wak. Paroraja awyaya also has five aspects, which are swayambhoo, parmeshthi, soorya (the sun), chandrama (the moon) and prithwi (the earth). Similarly, jeeva establishes a relationship with five variants of atma: shantatma, mahanatma, vijnanatma, prajnanatma and bhootatma. These five are also half-limbed and therefore incomplete. Let us now look at each of these in turn.

Shantatma brahma: Shantatma occupies the first place in the adhyatma (physical configuration) parallel to the five aksharas. It is filled with prana, or supraphysical energies, and is known as *swayambhoo brahma*. In sequence, it is followed by mahanatma (which is parmeshthi filled with apa); vijnanatma (which is soorya [the sun] filled with wak); prajnanatma (which is chandrama [the moon] filled with anna); and finally, bhootatma (which is agni permeated with annada).

Brahma permeated with veda is the foundation of all individuals, which is why the first step in the process of creation is to lay the 'foundation' for a body. Brahma lays the foundation through sperm being placed in the womb of the mother, and the sperm acquires the potential to 'construct' a body. Later, in the fifth or sixth month of pregnancy, Brahma positions Indra and Vishnu[125] in the 'heart' of the body to make it alive and vest it with cognition and the faculty of performing various actions. This Brahma, which provides the 'foundation', is shantatma, the first atma.

Mahanatma Vishnu: *Parmeshthi vishnu* enters the body with the support of shantatma. Since it has the propensity of yajnya, it divides into three dimensions — uktha, arka and asheeti — and intensifies and expands the yajnya. It positions itself in the heart as uktha, from which place Vishnu gushes forth as arka. In order to receive and consume anna, it spreads out in three divisions, comprising its 9th, 15th and 21st stoma. It collects soma (a supraphysical energy emanating from parmeshthi)

through these inlets, and becomes quiet after injecting these consumables. It does so in the same sequence, namely of anna in the first instance, which becomes urka and is finally transformed into prana. The yajnya which is a process of anna, urka and prana collecting and absorbing each other becomes the basis of life in that individual. (It should be noted here that the first shantatma lays the foundation by integrating the accumulation of 'seeds', supraphysical energies and material ingredients with atma.) This Vishnu is also called *yajnyatma* because it spurs on the process of interaction of the supraphysical forces which generate life. This second atma gives rise to the three attributes of *ahankriti* (the sense of individuality), prakriti (nature) and *akriti* (shape or appearance) in atma by sparking off the process of yajnya.

Shantatma is the product of a vital generative component called *oja*, and is the essence of swayambhoo. Similarly, vijnanatma is the product of the vital generative component of blood, and is the 'essence' of soorya; and mahanatma, which is completely amalgamated in the semen, is the essence of parmeshthi (which is its origin), at the meeting point of the eyebrows and nostrils. It spreads through the region between *brahma randhra* (the centre of the head) and the heart and, as mentioned above, *shukra* (semen) is its main ingredient.

Mahanatma is the source of all womb-born entities like human beings, animals, birds and so on. As akshara, it is integrated in the awyaya. Bhootatma is integrated in the body, where it acquires the shape of that body of its own volition. According to the *Upanishads*, that which resides in bodies without having a body itself is *mahan vibhu atma*.[126] *Shrimad Bhagwad Geeta* states: "*Mahad* (mahana) *brahma* is the location of origin and there I implant the sperm. All entities originate from there,"[127] and it adds, in respect of the forms or bodies which are produced from wombs: "Mahad (mahana) is the

location of their origin and I (awyaya) am their father."[128] In this context, 'I' and 'mine' stand for awyaya purusha. Awyaya injects the seed in mahana, which is akshara purusha. The seed is the producer. Supraphysical energies possessing subtle bodies are born, and gross material bodies are also produced from the seed. Therefore this mahanatma, which is without a body, transforms itself into the causal, gross and subtle bodies.

Vijnanatma: *Indra*. Indra gives rise to vijnana in the body with the support of Brahma who is shantatma, and Vishnu who is yajnyatma. Indra draws the 'juices' from the sun, which is divided into three constituents: *jyotistoma*, *gaustoma* and *ayustoma*. As noted earlier, the cosmos is divided into the five spheres of swayambhoo, parmeshthi, the sun, moon and earth. The critical components of each of these spheres are known as *manota*s.

Soorya has three components — jyoti, gau and ayu. These three manotas of the sun become devata, bhoota and atma in the physical universe. Supraphysical energies emanate from the jyoti part, while the material portion is gau and atma is called ayu. The gau portion nurses the muscles, flesh, bones and so forth of the human body, and the ayu portion makes our atma. All sentient beings owe their origin to the energies emanating from the sun, and even inanimate objects only survive because of the sun.[129]

Indra is present in the yajnya which operates in the body in the form of prana, an essence drawn from the sun. This vijnanatma is also known as the 'owner of the field'. Students of modern science are conversant with the statement that an electrical field surrounds an electrical charge, in the same way as a magnetic field surrounds a magnetic pole. If a charge or a magnetic pole is brought into the respective field around it, it experiences a force. Gravitational force functions in much

the same way: when a mass approaches the earth, it experiences a force towards the centre of the earth. In all these cases, the charge, the magnet and the earth are, respectively, akin to the 'owner of the field'. In the terminology of the seer-scientists regarding the supraphysical universe, this field is called *kshetra*, and the owner of the field is *kshetrajna*. This 'owner' extends the sphere of knowledge and awareness in the field up to a specified area.

Bhootatma, or the atma associated with the physical-material dimensions of the body, exists in the body of a sentient being. Filled with the power of consciousness and knowledge, it is called *prajnana*, and it generates all the senses which carry and transmit awareness and propel all activities. It generates knowledge and actions, and nourishes the veins and nerves which sustain and galvanise them. The 'owner of the field' — in this case, vijnanatma — motivates the bhootatma which accomplishes all transactions of the body. The famous seer-scientist Manu has explained this phenomenon succinctly.[130] Vijnanatma extends the period of life of a sentient being by illuminating mahanatma, prajnanatma, pranatma and bhootatma. In the physical organisation, it resides in the heart, from where its rays radiate out to pervade the 'space' where blood circulates. Soorya is its originating location; the suture on the top of the head is the point where a person 'wears' it; blood is its receptacle; and the heart is its base. These four are the 'attachments' of vijnanatma, which is in the nature of an 'essence' or 'juice' of soorya.

Prajnanatma: soma. Three types of substances nourish all the vegetation which grows on the surface of the earth. Some grow from prithwi (the earth) itself, some from antariksha (interspace) and others are divya (supraphysical). These substances are 'splintered' when anna is baked in fire and matures; at this stage, the relationship between their amrita

(durable) and *martya* (perishable) portions is snapped. The durable portion of anna is transformed into rasa (the 'juice' or 'quintessence') and is taken upwards by prana. The perishable part becomes waste products such as excrement, which is flushed out by *apana*, the force which causes the outflow of all that is superfluous to survival or sustenance. These durable and perishable substances are ripened and matured in agni, and rasa ('juice'), blood, flesh, marrow, fat, bone and semen are formed from them.

Apa, wayu, vidyuta and oja are formed when the earthly substances are totally removed. Oja is located in the interspace pervaded with soma. Whatever remains when apa and wayu are separated from oja is filled with vidyuta and soma, and becomes known as mana (translated as 'mind'). The soma rasa which is present in food is gradually purified and transformed into mana. In the pure mana, the rays radiating from prajnanatma generate a light, which transforms mana into prajnanatma. Seer-scientist Maharshi Aitereya asks: "Who is that atma which causes one to see, hear or smell the fragrance; which makes one differentiate between tasteful and tasteless; which controls various grades of intelligence, regulates memory, influences decisiveness?" He answers that all these are functions of prajnana.[131]

At this juncture, it is necessary to remind the reader that mana (mind) is of three types: the first is the mana of awyaya purusha, the source of all cognition, which is related to chidatma. The second is related to prana, which is not one of the organs of the body but propels all of them. The third is the mind of a sentient being, the experiencer of happiness and sorrow, which resides in the heart. Of these three, the second type of mana, which is related to prana, is prajnanatma. It is the wak in our speech; it is the taste on the tongue; it is the smell in our nostrils; it is the sound in our ears; it is the

touch on the skin; it is the figure in the eyes; it is the mind in the heart.

Just as the sun's rays acquire the colour of the glass on which they fall, so does this prajnanatma acquire different qualities when associated with various organs and their respective traits, generating 'radiance' in them. This is why it is described as chandrama (the moon). Often called pranatma, it is soma prana. As Aitereya explains in a mantra,[132] the five supraphysical energies are blended in it, three of which are agni and two are soma. The five supraphysical energies of the eyes, ears, mind, speech and prana reside in the supraphysical universe in this purusha, which permeates and pervades the whole body from the hair to the nails. All beings, even those as tiny as an ant, are infused with these supraphysical energies when they are born.

We know that the moon orbits around the earth. This prajnanatma orbits round the wak which is located in the mouth. In this case, wak is akin to the earth and prajnanatma to the moon. This prajnanatma operates from the region between the heart and the hair, and just as the sun illuminates the moon, so is this 'moon' illuminated by the sun — kshetrajnya (the owner of the field) — located in the heart. It illumines the sense organs in the upper part of the body, in the same way as the light of the full moon illumines objects on the earth. As they (the senses) become illuminated or activated from the location of prajnanatma at the tip of the hairs, the sense organs are able to attract things which are outside of a person and this signifies the waking state of bhootatma. When located on the palate, it does not touch the organs in the upper part of the body, but flows downwards to activate various impulses such as emotions and desires. This is the dreaming state of bhootatma. It then flows further downwards and reaches the region of the heart, where it

resides with *kshetrajna soorya*. Here it behaves like a dark, moonless night, enjoying the bliss of the self and unable to experience any other feeling. This is the sleeping state of bhootatma. Although our moon, with which we are conversant, moves according to fixed time spans and periodicity, this physical chandrama has no such limitations, as explained in a fascinating manner by Maharshi Tatteriya.[133]

The Bhootatma of the body: agni. The fifth Atma is called bhootatma, and is of three types: *shareeratma* (the atma of the body); *hansatma;* and *divyatma* (supraphysical atma).

(A) SHAREERATMA: PERISHABLE AGNI

Shareeratma is that which casts the five mahabhootas (basic, gross elements) in a specific mould, namely that of the body. These gross elements are the 'juice' of the perishable agni which takes the form of the earth.

(B) HANSATMA: PERISHABLE WAYU

Hansatma is an airstream which pervades all the gross elements, facilitating the consolidation of a body. It remains within the body of a person while (s)he is alive. At the time of death, if the body is buried the hansatma roams far and wide but always remains linked to the body. When a body is burnt, however, hansatma becomes bereft of the body and moves in an upper layer of the airstream in space known as *aemoosha*. At this stage it is described as an 'astral' or 'aerial' body; it lives for 100 years, and possesses ordinary common knowledge. It may possess the knowledge it had acquired during the lifetime of the person with whom it was associated, remaining in the same state of pleasure and sorrow as during that lifetime. Since it is 'aerial' and subtle it is capable of entering another body, and at times it may 'wear' the body

of sentient beings of various forms and shapes. It can appear in dreams and also speak. It may approach a living person and address her or him even while remaining invisible. (This species is often described as a 'ghost' in common parlance.) Some seer-scientists are of the view that the body of hansatma is destroyed on offering shraddha[134] at Gaya.

(C) DIVYATMA: PRANA

This third bhootatma is divided into three types, because the triple nature of prana (supraphysical energies) are divided into three lokas. The three types are *vaishwanara agni*, *taijas wayu* and the prajnya which is Indra. Of these, *Indra prana* is prajnyatma, as stated in *Kausheetaki Shruti*.[135]

This prajnyatma is permeated with the energies of jnana (knowledge) and karma (action), and is filled with desires and emotions flowing from knowledge and action. It is known as Indra because it is sustained by the 'juice' of soorya (the sun). Its fruition takes place in the mind, a manifestation of soma, which is produced from the food taken in by the individual.

THREE TYPES OF KARMATMA

Karmatma is bound within the parameters of actions and in that sense it is not free, but dependent. It is of three types: *vaishwanara*, *taijas* and prajnya, and is related to the agni, wayu and Indra mentioned above. Vaishwanara is saturated with agni, taijas with wayu and prajnya with Indra. Some individuals are vested with only one of these atmas, others with two and some species with all three. Individuals such as minerals and stones have a structure ('body') which is carried only by vaishwanara (in that taijas and prajnya are not present). Where both vaishwanara and taijas 'wear' the body but prajnya is not present, these entities belong to the category of vegetables,

herbs and so on. Sentient individuals are those in which all three constitute the substratum of the atma, such as in insects, worms, animals, birds and human beings.

Vaishwanara agni consolidates the components of the 'body'. It produces gold, silver, copper and other minerals through various permutations and combinations. In the body of a sentient being it produces the blood, marrow, flesh, bones and so on.

Taijasatma causes the rise and fall of an individual. For example, we can see its functioning in a tree, which grows tall and then later falls and dies. Similarly, in human beings we see taijasatma in the form of changes from childhood to adulthood, old age and so forth. We do not observe the characteristic of increase in the body of an individual like gold precisely because taijas is absent.

Prajnanatma arises from the maturing of vaishwanara and taijas, and gives rise to the perception that this is 'mine' and that belongs to someone else. All the organs such as the eyes, ears, tongue and so on evolve from this Indra prana, and are accordingly known as indriyas. These organs are present in the jeevas of the 'basic' category such as trees. And on close examination we find that they also experience sorrow and happiness, as sentient beings do. However, these organs are not active when a sentient individual is asleep; and, similarly, the functionality of organs is not manifested in trees and so forth. Therefore the seer-scientists have grouped them in the category of *antahsanjnya* — 'where consciousness is withdrawn inwards'. Prajnya prana, which is in a numb state in these categories of individuals, becomes alive in sentient beings. Individuals are of these three types, depending on the fluctuation in the presence and quantity of the three types of prana.

Of the five types of bhootatma — shareeratma, hansatma, vaishwanaratma, taijasatma and prajnyatma — the first two are

external and the others internal. Prajnanatma reinforces all these five bhootatmas, which are therefore sometimes collectively encompassed by the term 'prajnanatma'.

It may be mentioned here that there are seven states of prajnyatma: 1. *jagrata* (awake), 2. *swapna* (dream), 3. *sushupti* (sleep), 4. *moha* (infatuation), 5. *moorcha* (unconscious), 6. *mrityu* (death) and 7. mukti (liberation).

In this and other chapters we have used the term 'atma' with various qualifiers, such as prajnanatma, vijnanatma, mahanatma and hansatma. Understanding the science of atma is crucial to the comprehension of the *Vedas*, especially of the phenomenon of what happens after death. Here we have briefly introduced the subject, leaving a detailed exposition for another chapter.[136]

SECTION THREE

Raso amritam nam balantu mrityu
Balam na cha iti syad, rasa evam kim syat
Raso na cha it syat balam nu tishtet
Tasmadiman nityuto hi dharma

MADHUSUDAN OJHA, *Brahma Vijnana*

Rasa is enduring and eternal. Bala is transitory and impermanent. Although bala is impermanent, rasa cannot manifest itself without it. Similarly, if rasa does not illuminate it, on what support will bala exist? Therefore, rasa and bala are both always intertwined.

Rasa and Bala

the nature of their interface

RASA AND BALA ARE THE TWO PRIMARY BUILDING blocks of all creation. In the study of the process of creation and the coming into being of the cosmos, we meet various forms of relationship between two or more individuals. At times these entities are intertwined; on other occasions the relationship between them is one of simple co-presence. In a specific context we have said that there are two separate entities — say, rasa and bala — but that each of these does not exist without the other. In contrast the three components of atma, which are known as mana, prana and wak, exist together in a state of mutual fusion.

It often becomes extremely difficult to grasp fully the exact relationship between various supraphysical individuals in the process of creation. It is therefore useful to discuss, albeit briefly, the nature of their interface, interaction and relationship. Since we are only familiar with the physical universe around us, we shall attempt to give examples from our world. However, two important points need to be made at this juncture. Firstly, any illustration cannot cover all aspects of a relationship; in most cases it is indicative of only a part of the reality which we are trying to convey. Secondly, our illustrations are drawn from the cultural context of the seer-scientists, and are thus located in ancient times and in the way of life of those times. A reader who is not conversant with

this cultural environment will have to make some effort to unravel what the examples seek to communicate. But even a slight effort will make it abundantly clear that the principles of relationship and interface revealed through these examples are as valid in the present time as they were long ago.

Various forces interact in different ways in our physical universe, impinging upon and affecting each other. But theirs is not the only form of interaction in the supraphysical universe. As discussed earlier, rasa and bala are the primary building blocks of creation. In a different context they are called Brahma (which is rasa) and karma (which is bala). However, not all worldly relationships are applicable to Brahma and karma.

It has been noted elsewhere in this work that Brahma is still, free of turbulence, utterly peaceful and devoid of any motion or activity. As such, he is permeated with amrita, a term which denotes the enduring, unchanging principle of total motionlessness. In contrast karma, or action, is continuous change. It reflects turbulence, is symptomatic of restlessness and is a consequence of motion.

Various forms of interface, such as union and separation, occur normally between different individuals in the physical universe as a result of action in both individuals or in only one of them. When we talk of rasa and its interface with bala, it should be borne in mind that there is no motion in rasa. Bala, on the other hand, is continuous motion. Thus, it is bala which joins rasa in the interface between the two, not the other way round. Bala comes into existence on the basis of rasa, but interface with bala does not generate any disturbance or other kind of effect in rasa. Brahma, which is filled with rasa, remains a self-sufficient and independent entity at all times. Bala arises and vanishes in the ocean of rasa like the waves in a vast ocean; its emergence causes no augmentation in rasa, and its dissolution causes no diminution in rasa.

All relationships in the physical universe are between one bala and another. In other words, these relationships are caused by the interface between one form of motion or action and another form of motion or action. Since an action reflects continuous motion or change, a continuously changing entity cannot become the base for another activity. However, the same action acquires the character of a 'stream' when it takes place on the surface of the unchanging platform of rasa. This 'stream' then acquires its own individuality, even though it comprises drops of 'water' in a state of continuous motion.

Before examining the unique interface between rasa and bala, let us note that there are seven types of relationship or interface between one action and another in the physical universe and in our day-to-day activities. The first form of relationship is between individuals which occupy some area. For example, water and soil both occupy space. If a container is filled with water, it is impossible to add more water to that container. (Yet a few dust particles can find a place in the container, even when it is full to the brim with water. This is because water molecules are not densely and intimately bound with each other, so dust particles can enter the vacant space between water molecules.) In our other example, it is impossible to add extra soil to a container which is already filled with soil. Space for additional soil can only be created if a portion of the existing earth is removed.

In the second form of interface, several individuals blend or join together in one location. For example, we can light numerous lamps in one hall, and the light emanating from these lamps co-exists in that hall. The light of one lamp does not displace the light of another, because there is amalgamation. While it is true that a greater number of lamps would bring light to a larger area, the rays of light would nevertheless remain fused with each other. As long as the area

remains unchanged, the density of light increases but the nature of the relationship between the light emanating from the different lamps does not alter.

The third form of interface or relationship between two individuals is illustrated by the examples of a mirror and the eye. A mirror occupies very little space, yet images from various directions and distances gather therein; relative to the mirror, therefore, the scene reflected in it is vast. The same is true of the eyes. Although our actual eyes occupy a small area, they cover a long distance and a large number of objects.

The relationship of equilibrium, the fourth kind of interface, is another form of interaction, as illustrated by the example of two equally powerful people pulling on a rope from opposite directions. The rope appears stationary, even though it is subjected to powerful forces from the two sides.

The fifth form of interface takes place when two objects meet and their properties merge. For instance, bricks are made from clay mixed with water and then baked in fire. The water causes clay to become solid when the two are mixed. Although water has a cooling property, it becomes hot when fire interacts with it. In such a relationship, nature displaces the property of one and vests the new individual with new properties.

The sixth form of interface is the formation of a new individual due to the fusion of two others, such as the fusion of hydrogen and oxygen which, as we know, produces water molecules. While the seer-scientists opine that the world is made of five mahabootas[137] — the basic tattwas — modern criticism of this formulation centres on the fact that water is treated as one 'element' in ancient literature. This criticism is based on ignorance. Maharshi Kanad has said that the liquid or dense state of water is caused by the interaction of apa (water) and teja (heat).[138] And four states of water are defined in the *Aitereya Brahma*.[139]

Finally, there is a form of relationship called bhakti, whereby someone sitting in a moving vehicle does not move; only the vehicle moves. Yet after a certain period of time that person has moved from one location to another.

Of these various forms of relationship, the first — one individual occupies an area, causing another to be unable to occupy the same area without displacing the original occupant — is regarded as the principal form of interface in the physical universe. However, this is not the nature of the interface between Brahma and karma. Brahma is permeated with rasa and is complete within himself; he is all-pervasive. Bala associates with him, permeating rasa completely and uniting with him in a relationship of identity. Although Brahma and karma (or rasa and bala) have different names and therefore appear to be dual, bala establishes itself in rasa so completely that the relationship becomes non-dual. The union of rasa and bala is enduring, and the two are never separated.[140] Another important feature of the relationship is that rasa always remains somewhat aloof; only bala becomes apparent and discernible.

The question of the measure of bala in rasa when the two come together does not arise in this relationship, because there is no attribute of measurement in the two. As mentioned earlier, bala permeates the all-pervasive rasa totally, so that the two exist autonomously. Despite their fusion and a relationship of complete identity, the process of creation does not take place in that conjoined state.

Such a process of creative interface only commences when bala, which is limited and subsumed in limitless rasa, begins to interact with other balas. This interaction sets the process of creation in motion. There are two types of interface between rasa and bala. In one state, the two are indivisible but maintain their separate identity, creating a relationship of duality. In another state, bala encloses or surrounds rasa; in

this relationship, a force or power emanating from bala is generated. This second type of relationship begins when bala comes in contact with another bala. Just as one brick is laid on another, so is one bala positioned on another. Yet rasa remains dominant throughout this process.

At this stage three purusha structures emerge: awyaya, akshara and kshara. (These three are the subject of discussion elsewhere in this book.) Maya, prakriti and shakti emerge when bala becomes predominant — we shall be explaining these terms later. The interface between awyaya, akshara and kshara (the three purushas in which rasa predominates) and maya, shakti and prakriti (the three prakritis in which bala is predominant) marks the beginning of the process of creation and the emergence of the cosmos. This is a subject worthy of deep study, but which we cannot explore fully here.

The relationship between rasa and bala, when the two have become indivisible but maintain their separate identities, is known as *swaroop sambandha*, and is of six types:

1. Motion (action) resides in Brahma which is motionless.
2. Brahma, the principle of motionlessness or unchangeable properties, resides in change.
3. Change and motionlessness are together, but maintain their separate identities.
4. Change and continuity remain as two totally different individuals.
5. Change and continuity are inseparable from each other. Brahma is always independent, remaining distinct from karma (change), but karma does not exist independently of Brahma.
6. Brahma is the Truth, or Ultimate Reality.

The eternal, enduring, unchanging principle is true, whereas change or motion is merely a matter of perception,

an imposition on an unchanging factor. Let us take the example of cloth to indicate these relationships. Firstly, the cloth resides in the threads and has no independent identity apart from these threads. Just as a figure is carved out of stone, so is cloth made out of threads. In the second relationship, the threads are perceived to reside in the cloth. In the third, cloth is seen as a different individual from the threads. In the fourth, the threads have an existence independent of the cloth, because the threads exist before the cloth has been made and after it has been destroyed. In the fifth, cloth does not exist without threads and therefore the cloth has no independent existence. And in the last type of interface, it is emphasised that thread alone is true and cloth is merely an imposition on the threads. In fact, these different types of interface are largely a result of intellectual mystification.

In the process of creation, rasa becomes discernible in the form of bala. However, bala only begins to flow with the support of rasa, which is an aggregation of sat (existence), chitta (consciousness) and ananda (bliss). The flow starts when one bala is placed over another. Rasa and bala can never be separated from each other: we observe motion and change in the process of creation, but that motion or change takes place on the support of the motionless, unchanging base. In fact, rasa is also discernible as bala in that process, so that the motionless is reflected in a state of motion. With *pralaya* (dissolution), which is the obverse of creation, that changing and flowing bala is discernible in the form of rasa.

When rasa and bala are poised for creation, three types of interface tend to occur. These are known as bandha, vibhooti and yoga. (The term 'yoga' here is different from the yoga which connotes breathing, physical exercises and so forth.) When Brahma (rasa) is predominant, this is called the vibhooti stream, and when karma (bala) is predominant it is called the

bandha stream. Yoga is a state of balance, when vibhooti and bandha exist in equal measure. The process of creation and the coming into being of the cosmos begin with these three types of interface. Moksha, or emancipation, is the state in which rasa's association with bala is totally destroyed.

Bandha is a form of interface in which two individuals meet and mix and a new individual is produced; it is new because it did not exist prior to this mixing. In this state, the two individuals which have produced the new individual by their blending cease to exist. They 'die' in order to produce the new individual, so that they can never again become autonomous separately. To illustrate this, we can take the case of water in which air is flowing. When the air is surrounded by water particles, it acquires the form of bubbles in the water. If the cover of water around the air that has become the bubble does not break, water and air form a bandha relationship, generating foam as the new individual. Another example is the 'formation' of natural cream from milk, which comes into being when boiled milk is exposed to cool air. The cool air suppresses the heat generated by fire, and enters into a bandha relationship.

In the yoga interface, creation takes place in such a manner that two balas remain in comradely relationship. They have a harmonious co-presence, in the sense that they preserve their self-determining traits. A new individual is born from their union, but each remains in its specific state and is not destroyed. Unlike the bandha relationship, therefore, in this interaction the individuals which have 'given birth' to a new individual preserve their sovereign existence. Our two hands generate warmth when we rub them together for a while. The warmth is the new individual, even while the two hands maintain their independent existence. Similarly, fire is produced when one stone is rubbed against another with some

force. Fire is the new individual, but the two stones retain their particularised existence.

A vibhooti interface reflects an interaction in which one of the two individuals whose union has produced a new individual 'dies' or loses its distinctiveness, and the other individual, which possesses the enduring, unchanging property, continues to exist. A brick cannot be made from dry earth; so water is added. This water is dried after the clay is cast in the mould of a brick, a process which is accomplished by heat (fire) and air. The air enters the brick and consolidates its form. The relationship between the air, which exists in the brick like an invisible thread, and the brick is the vibhooti interface. This is known as *sutratma* (the atma that pervades an individual like a thread).

Let us take another example. Two pieces of iron cannot be joined together when they maintain their separate existence. They are softened by heating and then they can easily be joined together. After the heat has disappeared, the *sutratma vayu* keeps them together. This is the vibhooti interface. Similarly, we see around us various individuals, such as a house, a tree, a boat and an animal. These exist in our memories. Although they have their own separate identities, all of them interface with our awareness, which is why we see or remember them. So the relationship of these individuals with our awareness is also an example of vibhooti interface.

Awareness is an enduring, independent individual. Numerous other individuals and entities come into the fold of our awareness and pass out of its ambit again. However, our awareness does not become attached or tied to any one of them. This is the reason why they can all come into the orbit of our awareness without in any way circumscribing it. This interface of awareness and the numerous individuals of

which we become aware is another example of the vibhooti relationship.

Under the influence of the three types of *swaroop* relationships outlined above, atma becomes a consumer. Various forms of consumable material are presented to it, which is reflective of another form of interface known as *vrittita*. This relationship occurs between a supporting and a supported entity, in which the latter does not generate any traits in the former. Let us take the example of a person walking on a road and the road itself. The road supports the person, but it remains unaffected by any increase or decrease in the person's speed of movement. So there is a certain amount of independence in one of the parties from the changes taking place in the traits of the other. Another illustration of this interface is the relationship between the air and the sky: the air flows throughout the sky, which acts as support for the air but remains uninvolved in it.

This vrittita relationship is also of three types. The first is that in which bala develops an extraordinary quality, while not totally losing its own form and becoming submerged in rasa. This is called the *udar* (generous) interface. For example, a drop of water on a lotus leaf appears to be totally uninvolved with the leaf. However, the fact that it is located on the lotus leaf gives it a particularity which makes it different from ordinary water drops. This interface of rasa and bala is somewhat of this nature.

The second form of interface in this category is the intertwining of the support and the supported. Rasa and bala are so entwined that the two become almost single. Each loses its independent traits, and the motion which gives them their individuality is submerged. In our example of the thread and the cloth, therefore, the threads are not destroyed but their traits are submerged in the cloth. In the case of clay and the

pot, the trait of clay loses its individuality and is submerged in the pot. This complete intertwining of two individuals is the *samavaya* interface.

The third form of interface in this category is the attachment of one to the other. Bala embraces rasa and becomes attached to it. For example, when salt is dropped into a container of water, the entire mass of water becomes salty. This occurs because the salt embraces the water completely and becomes attached to it, causing the rasa, or taste of the water, to become distorted. This attachment principally occurs as a result of extremely close proximity and ensues when there is a coat of maya on atma. Because of this attachment, the free and independent atma begins to feel a sense of dependence and bondage.

In another example, the 'character' of all the threads is 'modified' when a white cloth is dipped in colour, in the sense that the colour of the threads also changes. The colour becomes a part of the cloth, embracing all the threads and becoming attached to them. To convert white cloth into coloured cloth is to create a kind of distortion of the original. Similar distortions occur in atma due to its association with balas which are in the mode of attachment.

At the outset of the process of creation, shakti (a force) interfaces with rasa which is vested with bala, causing awyaya purusha to permeate the cosmos in the unmanifest form of cognition; as a result, consciousness incorporates the entire cosmos in its fold. The gross universe comes into being through the samavaya interface, and is the manifestation of kshara. This is the consequence of an interface between awyaya and akshara, whereby awyaya remains the unaffected support for akshara. Supraphysical energies or devatas come into operation in this kind of interface.

No modifications occur in awyaya purusha or in akshara, but only in kshara purusha, from which the gross universe comes into being. It is difficult to explain why this diversity arises in the universe, and it is impossible to explain how pure rasa is transformed into atma. From where is the force generated? How does this interface take place? The seer-scientists have revealed to us the nature and the kinds of interface which lead to the process of creation. The maya form of bala generates a sense of limitation in rasa and becomes the atma of an individual, setting the process of creation in motion. Liberation from the cycle of creation is possible only when jeeva is completely detached from any association with maya, and such complete freedom is very rarely achieved. Otherwise, imprints of actions flowing from consciousness linger in all living beings, even while the traces differ from one individual to another. Thus, some covering of constraint remains in all individuals, differing only in degree. Any such constraint results in the bondage which causes the cycle of creation to continue unabated due to these interfaces.

prakrtim purusham cha eva
viddhy anadi ubhav api
vikaramhs cha gunasm chaiva
viddhi prakrti sambhavan

GEETA 13:20

You must know both what is purusha and what is prakriti, how one is transformed into the other.

Prakriti, the active and generative energy of the cosmos, and purusha, the fundamental tattwa from where the creative energy emanates, are without beginning. While one must know this, one should also know that the manifestations, modifications and transformations (which make the cosmos) are products of prakriti.

Introducing Purusha and Prakriti

PURUSHA AND PRAKRITI, TWO CRUCIAL TATTWAS IN the cosmic matrix, have been grossly misunderstood and misinterpreted both in the philosophical and scientific domains. Likened to the male and female principles, their meaning has been imprisoned in the gender stereotypes of Western civilisation. Not only has this caused havoc in the sciences discussed in the *Vedas* and indexed in the *Geeta*; but grave distortions have been injected into the understanding of ethics, law, customs, social arrangements and, above all, male–female relationships based on the Vedic principles as enunciated by the seer-scientists. The usage of the term 'purusha' to communicate the masculine gender is a narrow view of the word. By superimposing this meaning on other, more profound contexts, commentators and translators have obscured the real significance of this factor in the cosmic arrangement.

The relationship between prakriti and purusha is not hierarchical. The two are intertwined, something perhaps difficult to comprehend in a cultural context wherein all relations are based on superiority and inferiority: between human beings and animals, men and women, followers of one profession and another, ruler and ruled, and so forth. In contrast, the social arrangement flowing from, and based on, the perceptions of the seer-scientists is in harmony with the cosmic balance. This indicates that all sentient and inanimate

beings, all species and all sexes — in fact, all entities and individuals — are bound to each other and among themselves in a comprehensive and complex matrix of interdependence. The sun, moon and earth have different functions and varying locations on the cosmic canvas but are not related to each other in a hierarchical fashion. Various dimensions of their relationship need to be examined in depth and applied creatively in order to establish an order of harmony and happiness in the universe. Such an order would not be based on concepts of superiority and inferiority, but on relationships of interdependence.[141]

We shall examine the concept of purusha in this chapter, in the sense in which it is perceived by the rishis or seer-scientists. Western scholars have translated purusha as "a man, male, human being (pl. people, mankind)", "a person, a male person", "an officer, functionary, attendant, servant", "a member or representative of a race or generation", "the primeval man as the soul and original source of the universe", "the personal and animating principle in men and other beings, the soul or spirit", "the Supreme Being or Soul of the universe", and "the divine or active principles from the minute portions of which the universe was formed". According to the Western understanding of Indian philosophy, purusha ("person") represents 'the soul, or self'. "The existence of an eternal, unchanging self is accepted by most schools of Indian philosophy, though they differ in their description of its essence and the proofs for its existence. In the dualistic philosophies of Samkhya and Yoga, purusha is opposed to prakriti (prakrti, 'matter'), as the two ontological realities. All animate and inanimate objects and all psycho mental experiences are emanations of prakriti." "Purusha is also, in one of the early creation myths related in the Vedas, the primal man from whose body the universe was created."[142]

Some commentators have also asserted that Samkhya views purusha as 'inner self' and atma as 'cosmic self'. Ontologically, they perceive "a dualism of two all-pervasive ultimate principles, namely, pure consciousness (purusha), construed pluralistically, and one primordial materiality (mulaprakrti). The inference of purusha is based upon the need for a catalytic consciousness, itself distinct from intellect and primordial materiality, but the presence of which is essential for the occurrence of the awareness function of intellect and the transformation of primordial materiality. Only, pure consciousness (purusha) and primordial materiality (mulaprakrti) are independent existents. They exist in some sense as 'distinct' or 'separate' from one another. The two are described in samkhya philosophy as being ungenerated, outside of ordinary space and time, stable, simple, unsupported, nonmergent (or nondissolvable), without parts, and independent. The relation between them is one of simple co-presence. Pure consciousness is inherently inactive, but primordial materiality is inherently generative in the sense that it is capable of generating a set of discrete or manifest subdivisions when activated by the catalytic presence of pure consciousness."[143]

As we proceed with this chapter, our readers will realise the vast difference between the scientific definition of purusha and these speculative philosophical explanations, which are partial, superficial and fundamentally erroneous in the context of the fundamental tattwa for which purusha is employed in the *Vedas*.

Let us visualise a vast limitless ocean of rasa — the pure supraphysical energy which has no attributes, no movement, no distinctiveness and no limiting component. In this serene, motionless, limitless essence of rasa, a slight, a very slight motion occurs as a minute bubble forms. This is bala. The

entire process of creation takes place through the interface and interaction of balas on the quiet and motionless surface of rasa. In its original state rasa has no limiting component, no attributes and no traits. It becomes known as purusha when bala invests it with distinctiveness and special traits — in other words, when it acquires attributes. This first or original relationship between rasa and bala makes it impossible to tell them apart. Their relationship is an enduring one, and the eternal purusha (which is rasa vested with bala) becomes the starting point of the entire cosmos.

We could say that all universes are permeated with purusha. In the *Vedas*, the term 'purusha' has various connotations. Purusha is the one who becomes active in the first instance and remains active continuously thereafter.[144] Etymological analysis also indicates that purusha is one who assumes several forms on its own.[145] According to another definition, purusha is one who is confined to the area bounded by nine doors.[146] A different etymological analysis reveals that purusha resides in the confines of mana, prana and wak and is the first to burn all negativity into ashes.[147] (Reducing the internal akasha, or space, to ashes occurs just prior to the beginning of the process of creation.) In this instance purusha is perceived as atma.

A simple definition of purusha is "(s)he who resides in the body".[148] The 'body' of an individual is considered to be like a container in which purusha dwells, penetrating all aspects of this 'body'. We use the word 'space' for akasha, and the vast space within an individual's body is called *daharakasha*, or *brahmapura* — the 'abode or city of Brahma' inhabited by purusha.

Purusha is transformed into the three states of awyaya, akshara and kshara, as we have explained in the chapter "The Four Limbs of Brahma". These three divisions of the internally coherent structure which is purusha occur because of variations in the rasa–bala relationship. The changing

conditions brought about by alterations in the interface, contact and association between rasa and bala cause the emergence of distinctions in the bhootas (material objects) which come into association with purusha.

The difference between rasa and bala also becomes discernible in this process. We often use the expression that one factor has 'entered' another factor and located itself there, rather like a foetus in its mother's womb. This defines the nature of the association of rasa and bala in a specific state. For example, the statement that bala 'enters the womb' of rasa means that rasa is dominant in that state, and purusha becomes known as para purusha or awyaya purusha.

No other factor has a greater potentiality than purusha. Its spontaneous, inherent power is called para shakti, which is invoked as a female in the *Vedas*. (The seer-scientists have often used the male metaphor for supraphysical energy in its dormant or latent state, and the female metaphor to indicate the transformation of energy into its active and regenerative state.) We explain the role of awyaya in detail in the chapter entitled "The Contours, Composition and Significance of Awyaya". It will suffice to say here that awyaya purusha has no involvement with the cause-and-effect disposition in the cosmos, although it is vested with attributes and functionalities. Its power is manifested in the form of awareness, strength and activity. Para shakti is the potentiality which triggers creation, ensures sustainment and brings about the destruction of every entity in the universe.

Para purusha is explained according to four other terms: uttam, *anuttam*, awyaya, and *shashwata*.

1. Purusha is defined as "that which is the 'best'" (uttam). Beyond akshara and kshara, it is finer and subtler than either of these, and is known as para.

2. Since there is nothing subtler than or superior to para purusha, it is also defined as anuttam, highlighting the fact that it is subtler than both kshara and akshara.
3. Awyaya indicates that akshara purusha, endowed with a variety of powers, becomes transformed. In this process, differentiation occurs in a homogeneous entity and it becomes associated with several individuals, yet is never divorced from *para purusha shakti* (its latent potentialities). This is why it is called awyaya — that which does not diminish or become exhausted. Akshara (a shorter term for akshara purusha) has two categories: para (creative akshara), and ordinary akshara. Numerous ordinary aksharas arise and fade in para akshara.
4. Because para purusha always remains the same, in that nothing arises and nothing fades in it, it is given the name shashwata, meaning 'eternal'.

Rasa is predominant in *uttam purusha*, which also has a special measure of bala. A new creation occurs when other balas become associated with it, and this is known as akshara purusha. Just as we often see thousands of sparks emanating from a log which has been set ablaze, in the same way innumerable dispositions arise from akshara. These are ultimately also subsumed in akshara.

The *Vedas* describe akshara purusha and para purusha as "brilliant and formless" purusha. Unborn and all-pervasive, they are also described as "white in all its utter purity". Akshara is not confined within the bounds of the mind. It has no prana. In other words, it is unrelated to mana, prana and wak, and lacks *pashuta*, the traits flowing from the five senses.[149] When the senses are active mana is predominant, followed by prana and then wak. Prana is predominant in the akshara state,[150] and wak and then mana follow this.

(Although similar in most respects, a subtle difference does exist between awyaya and akshara. The latter becomes the cause of the cosmos, whereas awyaya does not.)

THE COSMOS AND AKSHARA

There is utter stillness in space, so that when air moves in that space we notice the motion in the atmosphere. While akshara remains motionless, the entire cosmos continues to move within its ambience, exhibiting all its multiplicity and diversity. Akshara is known as *bhoothrit* — 'one who wears, bears or keeps the cosmos in its embrace'. During *sarga* (the process of creation), all individuals draw their rasa — the essence of their being — from akshara. Yet, because of its own limitlessness, akshara is never diminished.

All individuals and living beings are ultimately subsumed in prakriti, the inexhaustible reservoir of energy of purusha. At the beginning of a new cycle of creation the entire universe comes into being when this same prakriti is propelled into creative mode.[151] All living beings and entities are under the regulation, control and dependence of prakriti. The entire universe arises from and is ultimately subsumed in that vast reservoir of energy. This energy is continually active, even while akshara purusha is not entrapped by prakriti's activities. Known as *dhruva*, it remains stationary and unshaken.

All the entrapments which are in the nature of maya — the incomprehensible tattwa — are called *kootas*, a term which indicates that the trap itself is an illusion. In this context koota is used to convey the collection of five basic elements or mahabhootas. (Koota can also be a collection of several entities and, in a different setting, is the term for a mountain peak. Thus, akshara is known as *kootastha* because it is located at the topmost level of the cosmic matrix.)

Akshara remains forever in the same unchanging and definite condition throughout existence, and it is for this reason that koota is generally considered to indicate unchangeableness, the quality of remaining the same. Akshara itself is unmanifest, by which we mean undiscernible. However, akshara manifests in the form of kshara when it becomes dense. The unmanifest state precedes the manifest state.

Kshara comprises all entities in the universe, all living and inanimate beings, and all lokas (states of existence). Akshara keeps the cosmos in perpetual motion. Jeeva is a manifestation of kshara, which is able to gain para tattwa only with the assistance of akshara. Akshara is the bridge linking these two states.

We need our senses in order to discern objects in this universe. Prajnya (the faculty of cognition) underlying and interwoven with our senses imagines the form of an object, and our senses cannot function without the presence of that cognition. This cognitive faculty, related to the mind, decides to accept or reject an object with the assistance of buddhi (the intellect). So an object becomes discernible by the application of the faculty of cognition through the medium of the intellect. As we know, our cognition and intellect remain unmanifest. That being so, how can akshara, which regulates them, be discernible? No living being in the universe can live autonomously and independently without the help of akshara. We all derive our existence from it. Akshara permeates and pervades everyone and everywhere, providing the 'juice' of life — rasa — to every individual and regulating the entire universe. Thus akshara is Ishwara.

When bala arises in the rasa which is within akshara, the sequence of evolution of kshara begins and thus commences the process of creation. Three different structures arise from the interfacing of rasa and bala, and these become awyaya,

akshara and kshara. In the visible and discernible cosmos, the three purushas of para, akshara and kshara permeate throughout. Kshara is the effect, akshara is the cause and para is neither cause nor effect.

Awyaya purusha has no body and is unaffected by pleasure or pain. Akshara and kshara, on the other hand, are linked to a body and experience likes and dislikes. Every object, individual or entity made from the accumulation of the five mahabhootas (basic elements) is included in the category of kshara. Akshara, another individual, resides in this accumulated totality of matter. Awyaya is the purusha which remains totally unattached and uninvolved. So as we can see, although the three are very closely connected, they are also different and distinct from each other.

Let us understand it clearly. The collectivity of all matter and physical entities is kshara. That which resides in this collectivity without diminution or decay is akshara. Awyaya is the one who does everything and yet remains uninvolved, detached from the entire process of creation and the cosmos. None of these three can exist without the others; they are always intertwined.

When an earthen jar is crushed, it continues in the form of clay. Ornaments are melted, but they survive in the form of gold. In the same manner, although kshara continually transforms itself into various entities, it experiences no diminution and new ksharas continue to evolve. The entirety of kshara makes akshara its base, and akshara exists on the base of para tattwa.

These three are separate, but they are three aspects or dimensions of Brahma. Kshara tattwa is the external form or superficial aspect of all individuals and entities, within which akshara tattwa is located. Even subtler is para tattwa which resides in the innermost recesses of akshara. The entire

universe evolves from Brahma, expanding and organised in this three-tier structure.

All that exists — all the forms composed by kshara and akshara — comprises the cosmos. Purusha remains unattached and distant from the cosmos, and is known as *purushottama*, the 'supreme person' or 'highest individual'. In a fundamental sense, purusha is the ultimate source from which all individuals spring, the core of the core. Purusha is also used to describe the core of every layer in the cosmic matrix, being the centrality at every level. At each of these levels, purusha acquires a different name. Para purusha is predominant in all discernible individuals with a body. Since they reside in pura, akshara and kshara are also called purusha.

The first individual — the first purusha — is known as para purusha. Akshara is called purana purusha. The atma which resides in the body is called yajnya purusha. These are three forms of the one fundamental purusha.

Some scholars hold the view that the structural organisation known as purusha should be considered to be merely twofold rather than threefold. They argue that this is so because the cosmos is created by kshara and akshara. Purushottama is beyond these two, is totally unattached and uninvolved in the process of creation, and cannot therefore be called purusha. (In some places the term 'purusha' has been used for Brahma, who is unique, one and alone and is pure unalloyed rasa. Bala is present only by way of a limiting component and is not involved with rasa. In these instances, one should imagine that the term purusha has merely been attributed.)

According to some scholars, para purusha has both the attributes of amrita (unchangeability) and mrityu (changeability).[152] These contrasting traits of permanence and transitoriness coalesce in para purusha and should therefore be treated as a purusha. The paratpara structure which

Prakriti is the subtle material power within phenomena which produces their manifest form. It is the producer, the *natura naturance*, the productive aspect of nature, the inner principle which causes things to come into being. It denotes the innate nature of living beings, the world's innate nature and the material world in its totality, and therefore expresses the correlation of the micro and macro cosmos. It is the creative material of the world, the generative principle, that from which the world is produced and that into which it will dissolve in the eternal rhythm of death and rebirth, withdrawal and manifestation.

Prakriti is not a state of absolute motionlessness; on the contrary, it is a state of movement and mutation, the mutating absolute principle. Movement is inherent in it — no agent is necessary at any stage to move it. Prakriti is described as subtle, eternal, comprehending causes and effects, durable, self-sustained, immeasurable, undecaying, stable, and the source of the world.[153] Prakriti expresses the organic metaphor of creation. It is sometimes a symbol of (and perhaps an attempt to conceptualise on an abstract level) the processes in nature of growth and decay, birth and death, night and day, the seasonal change of vegetation.

Prakriti is at the beginning of the process of manifestation, since it possesses an inherent power to produce; yet it is also the subtle stage of the dissolved universe. The cosmic processes are wave-like movements of cosmic matter and, since decay is the nature of things, manifestation ends in a cosmic dissolution. The universe eternally oscillates between manifestation and non-manifestation. Prakriti stands at the beginning but also at the end of the period of manifestation of matter, and its dissolution is the goal of the soteriological process. Prakriti is continuously changing, as the unmanifest becomes manifest and the manifest becomes unmanifest once

precedes these two has no attributes and so cannot be named purusha.

The eternal and unchangeable purusha is never without prakriti. All that prakriti presents for purusha's 'use' is categorised as *purusharthas*, or the 'attainments' of purusha. Before we move on to explore the significance of purusha more deeply, it will help to include a brief discussion of prakriti, specifically in terms of the context in which philosophers understand it.

THE SUBTLE MATERIAL POWER OF PRAKRITI

Prakriti is a common term in Sanskrit texts, not only those of the Samkhya and Yoga systems but also texts of phonetics, grammar, ritual theory, medicine, political theory, drama, mythology and theology. In the lexicon of Indian philosophy, prakriti — used in the feminine gender — is best known as the term for the material side of the duality of matter and consciousness. Prakriti as materiality is the opposite of pure consciousness. Unmanifest materiality is independent and all-pervasive; it precedes the existence of time and space and is a material transcendent principle, immensely powerful, containing the whole world in an undifferentiated state.

Prakriti indicates the original, first or primary (in contrast to which *vikrti* is the secondary). Prakriti means 'the material cause of sound'. In grammar, prakriti connotes the roots and stems of words. In the ayurvedic texts, prakriti means the normal, ordinary pattern, the natural way, the nature of the person, her or his physical constitution and health. Thus prakriti denotes the innate nature of the individual as well as the innate nature of the cosmos. (This is another indication of the Indian inclination to include humans, gods, plants, animals and elements in one classificatory system.)

more. At this very moment, however, everything — an infinite number of universes which were, are and will be unmanifest and manifest — is in existence, and is held together as causes and effects within this immense material power.[154]

sapta praanah prabhavanti tasmaat
sapta archishah samidhah sapta homaah
sapta ime loka yeshu charanti praana
guha ashaya nihitah sapta sapta

MUNDAKA UPANISHAD 2:1:8

The seven supraphysical energies emerge from it, [and] the seven flames and the seven senses emanate from these. The seven fuels and seven offerings (of the fuel into the flame) also [emanate]. These remain located in the deep alcoves of every individual (in the cosmos). These are organised in batches of seven.

Seven Purushas and Prajapati

The transformation of one supraphysical energy into another

THE WHOLE OF CREATION CAN BE DIVIDED INTO the two categories of general and special creation. The making of a tattwa which permeates everywhere in the cosmos is classified as general creation. There can be no special creation without general creation; the special category is an evolution from the general category of creation. We shall begin by discussing general creation.

Brahma is that rasa which has the capacity to grow, evolve and spread out spontaneously. It is like a juice that ferments on its own, then boils over and spreads. (The word 'Brahma' evolves from the root brihman, meaning 'to spread out'.) Brahma has three dimensions, each of which has a specific name: chit, *chetana* and *chitya*. When a 'coating' of bala takes place on another bala, *chita brahma* is the base for that 'coating' to occur. In fact it is the basis of everything and the beginning of the beginning. Balas arise and are piled one on top of another and one with another in this chita brahma. The stimulus for the process of piling or coating is known as *chetana brahma*, while the impulse for creation comes from a specific dimension of Brahma known as *chiti brahma*.

A new 'individual' arises when one bala becomes part of another bala in a process of assimilation. This is *chitya brahma*, which is dominated by rasa. In contrast, rasa and bala are found in equal measure in chetana brahma, while bala is dominant in chitya brahma.

To recap on terms we have met earlier in this work, awyaya purusha is equated with chita brahma, akshara with chetana brahma, and kshara with chitya brahma. These three together present a unified appearance, as if intertwined in one single structure. Purusha is awyaya brahma, in which akshara brahma and kshara brahma are integrated, assimilated and intertwined. Since an individual who is part of a group or collective is often called by the name of the collective, these three are also given the name 'purusha'. Yet this integrated and assimilated structure is actually made of seven purushas. Such a purusha is known as prajapati. All seven purushas are pranas (supraphysical energies).

Four purushas comprise atma in a prajapati. Two purushas are the 'wings' and one is located in the 'tail' of a 'body'. The splendour of these seven purushas is the head of prajapati.[155] This portion is saturated with mana, and the essence of the seven pranas flows upwards towards the head.

All ksharas are produced from akshara and are its modifications. The producers of the pranas (supraphysical energies) are five: Brahma, Vishnu, Indra, agni and soma. Of these, Indra is the central or principal supraphysical energy.[156] The entire universe follows the directions of Indra and is regulated by him. Indra spurs and activates other pranas through all the indriyas (senses). These other pranas are ignited, giving rise to seven different types of purusha, which are embedded in the basic purusha described earlier.

These seven purushas are to be found in different locations within an individual: two purusha pranas are situated in the portion above the navel (this is indicative of the centre of an entity), and two are located in the portion below it. These four purushas are akin to atma. The parts of a 'body' fall into two categories, one of which is critical for its survival. The 'body' is not bereft of the life-force for as long as the

parts included in this critical category are not detached from it. Purushas which reside in those parts are regarded as the atma of that 'body'.

Those parts whose loss or separation does not diminish the life-force in the 'body' constitute the second category. These parts are regarded as the 'wings' and 'tail' of the 'body'. Two purusha pranas emerge as 'wings' from the atma comprising the four purushas given earlier, and these 'wings' cause expansion and contraction of the 'body'. The final and seventh prana is the 'tail', and it is due to this prana that the 'body' rests on the earth. (A 'body' is a small part of the earth itself, yet as compared to the other four bhootas [gross elements[157]] of agni, wayu, jala and akasha, the earth's contribution in the configuration of the 'body' is the maximum. This is why the 'body' is often described as a 'product of the earth'. The supraphysical energy at its base is connected to the earth to the maximum degree.)

Prajapati is made from the integration of these seven purushas, as if seven purushas had been coated in layers on top of one another. The structure is akin to seven layers of bricks being laid on top of each other. When this process is completed, the integrated configuration itself becomes an autonomous prajapati, known as *chitya* (coated) *agni*.

The 'juice' or essence of the seven purushas which comprise prajapati, the master of the body, is drawn upwards. Raised to the upper portion of the 'body', it becomes the 'head' (where the brain is located), in which all the devatas (supraphysical energies) reside. All that nurtures it and the offerings made for this purpose are directed at the devatas. Experiences live as knowledge in the 'head', nourishing the devatas.

Akshara comprises three purushas and is the base or support of all the seven purushas, bringing all of them together. This is known as *vayonadha purusha*, in relation to

which these seven are known as *vaya*; they comprise one 'body'.

Vaya and vayonadha are technical terms used in the *Vedas*. That in which several entities are located is vayonadha, and each located unit is a vaya. In other words, a package is vayonadha and all that is packed in it is vaya. Or we could say that a support or base is vayonadha and all that is supported by it is vaya. The yajnyas in the seven purushas mentioned earlier assemble in the purana purusha and become one. Therefore, purana purusha is vayonadha and the yajnya purushas are vaya. The essence of the seven yajnya purushas situated in vayonadha is called *ahavaneeya agni*, which itself is another purusha.

The prajapati which is a collective (of the seven purushas) is the seed of all creation. No material creation is possible at any time or place without prajapati vested with awyaya, akshara and kshara.[158] We have noted elsewhere that paratpara brahma is one of its kind and is without any limiting ingredient. It appears somewhat unexpectedly in the form of prajapati. Paratpara remains without any limiting element for as long as the triple vedas do not arise in it. Without veda, Brahma does not develop the dimensions of direction, space and time, and does not acquire its boundaries. Only when these dimensions arise does paratpara generate Brahma and the triple vedas within its ambit.

Brahma, as manifested in the form of veda, is the platform upon which creation takes place. Therefore, the great seer-scientists hold that vedas emerge before the cosmos comes into being, and that veda is the underpinning of the universe.[159] This relationship between Brahma and veda is so subtle that it often makes the two indistinguishable; therefore, veda and Brahma are often used as virtual synonyms.[160] In this context, the word 'Brahma' should be taken to indicate 'veda',

and it is against this background that the terms 'Brahma vidya' and 'veda' have been used as synonyms in the Vedic texts.

Prajapati is a manifestation of Brahma and is vested with the three vedas, each being a yajnya. Yajnya is the process of proliferation of prajapati. In other words, yajnya is the process by which individuals are replicated, grown and augmented to make this universe.[161] This process of yajnya and the coming into being of prajapati are indistinguishable.[162] Yajnya is everyone's atma. It has been stated in the *Vedas* that yajnya is the atma of all beings and all devatas. Referring to yajnya in the *Geeta*, Krishna states: "I am the master of yajnya." He is pointing to atma when he says this.

We need to comprehend fully the technical meaning of the term 'atma' in this context. The uktha (centre) of every entity is a combination of rik, yaju and sama. This triple veda is Brahma, and atma is that which resides and is sustained in Brahma, and which constitutes the foundation of an entity. Although a part of the infinite (reservoir of supraphysical energy), it acquires defined contours and limits when associated with an individual. Prajapati is a manifestation of yajnya, which expands and grows because of the vedas. In the structure of a 'body', 10 types of yajnya occur continuously.[163] The process by which the *dhatus* (ingredients) in the 'body' are injected into the atma so that one ingredient becomes encased over another, and another and another and so on, is known as *chiti yajnya*. (This is also the name given to the process by which devatas enter atma as wak, prana and so forth.)

Prana in the body is connected with the rasa (quintessence) of soorya (the sun), and apana is connected with the essence of the earth. The interaction and inter-offering of prana in apana, and apana in prana, go on continuously. This interaction gives rise to a specific agni known as vaishwanara. The process of inhaling and exhaling occurs when the offering of deva prana

takes place in *vyana prana*, namely when there is an interaction of these two types of prana. According to the seer-scientists, the supraphysical energy of deva prana emanates from apa (water is its material manifestation) and the moon, and is neither excited nor weakened irrespective of whether it is stationary or in motion. This means that it does not diminish. This is the second form of yajnya and there are other, similar yajnyas.[164]

The interaction and fluctuation of the kshara and akshara supraphysical energies cause atma to become the numerous 'individuals' which comprise the universe. Atma is the minutest of the minute and the largest of the large. It is located in the innermost recesses of an individual's heart, described as 'the most secret place' in the 'body' of an 'individual'. It is subtler than the subtlest and grosser than the grossest particle. One who is not trapped in the circle of the yajnya of nature discards all sorrow, receives the grace of Ishwara and is able to encounter atma. An individual is able to transcend death when (s)he is able to know atma, for there is no other way of escaping the vicious circle of mortality.

Atma resides in every 'individual' which has a 'body' and is the basis of all material creations. As mentioned in the chapter "An Encounter with Brahma", the kshara dispositions in atma are manifested in the form of various sentient and inanimate beings. The four tattwas which are born in this atma from prajapati are agni, Indra, soma and parmeshthi.[165] The seer-scientists say that the entire cosmos is made of these devas, or supraphysical energies. These are related to the four vedas, and hence the seer-scientists assert that the universe is permeated with the four vedas. These devas or devatas remain under the control of prajapati and permeate everywhere as offshoots of kshara. The first offshoot of kshara is prana, from which evolve deva, pitara, rishi, *manu* and *gandharva*.

Prana, as we know, is a genre of supraphysical energy. It has many classifications and categories. Some pranas are of the nature of an element, in the sense that they are original and pure. Others are in the nature of a compound, in the sense that they are composed of more than one element. Original pranas, which are not compounds, are called rishi; but when one category of prana joins another category, they are no longer called rishi. By the blending of rishi pranas, pitaras (a category of compound pranas) emerge. Through the interaction of pitar pranas, deva pranas and asur pranas come into being. As a result of the subsequent cycle of interaction of deva and asur pranas, gandharva and *manushya* pranas are born. Thus rishi, pitara, deva, asura, manushya and gandharva are all various classes of prana. Although these devatas permeate everywhere, they establish their individual correlations with atma.

Of these four devatas, parmeshthi transforms itself into apa[166] and this apa tattwa becomes discernible as the cosmos. This happens through the process of yajnya, spontaneously stimulated by a collectivity of apa in prajapati. Since one of the prajapatis is transformed into prana and prana pervades the entire cosmos, we come across the formulation that prana is the cosmos.[167] Prana flows like a breeze, and this air, permeated with supraphysical energy, is prajapati. Everyone who is vested with prana is a prajapati. Indra is transformed into wak by another yajnya which prajapati, imbued with prana, performs with Indra. Thus we discern the process of transformation of prana to prajapati, of prajapati to Indra and Indra to wak. The evolution of the cosmos follows, and this has led the seer-scientists to state that the cosmos is a manifestation of wak.[168]

Under the impact of Indra on agni and soma, agni becomes the consumer and soma the consumable. The continuous

interaction between the two gives rise to this universe. Agni, Indra, soma and parmeshthi come into contact in the ocean of supraphysical energy pervading the parmeshthi region through matarishwa. This is a specific airstream circulating in the region, which becomes a conduit for that contact, and the interaction gives rise to a supraphysical energy called bhrigu. Riding the current of matarishwa, this supraphysical energy spreads throughout the entire universe.

daivi hy esha guna mayi
mama maya duratyaya
mam eva ye prpadyante
mayam etam taranti te

GEETA 7:14

This maya, springing from supraphysical energies, comprises the (three) qualities. (It is like a turbulent ocean). It is extremely difficult to negotiate. Only those who draw strength from me (the basic source of all creative processes) are able to cross it and overcome its powerful influence.

What is Maya?

IN SANSKRIT GRAMMAR, THE MEANING OF THE word 'maya' is derived from the root *ma*, which means to measure, to quantify or to limit. This connotation indicates the mapping out of an entity, in the sense of revealing its limitations. Maya also gives an illusion of the existence of something which does not exist in reality.

The concept of maya has been explored in considerable depth by scholars of various schools of darshana, as well as several eminent exponents of Vedanta. An understanding of their philosophic explorations is helpful if we are to move towards a comprehension of the phenomenon of maya in the vijnana (sciences) explained in the *Vedas*.

The philosophical realm sees an underlying unity in the universe. All notions of difference are false and are caused by maya. False, in this context, means sublated by correct awareness. In the field of logic, sublation indicates contradicting or disaffirming a proposition. However, sublation in Hegelian philosophy means resolving opposites into a higher unity. It needs to be clarified here that even a false idea can cause 'enlightenment' in the same way as a painting or a reflection can illuminate their originals.

Philosophers say that maya is the name for an appearance which is contrary to reason. It is not non-existent, since it appears; yet it is not existent, since it is sublated. It is neither

different from consciousness nor identical to it (since it is inert). It is not composite, since no parts caused it; yet it does not lack parts, since its effects exist and these effects are made up of parts.[169] For all these reasons, maya is a phenomenon which arouses great wonderment.[170]

The mind is subject to the three states of waking, dream and deep sleep, and because of these it acts and is bound by the results of these actions. But the Self is not bound by the mind's doings, any more than the sun is affected by smoke or vapours covering it. Although there is the appearance of an effect, nonetheless the sun is unaffected, in the same way as the Self may seem to be touched by maya but actually is untouched. All practical affairs are the result of maya, but it is sublated by knowledge of the Self.[171] Maya is the most difficult theme of all for students of Vedanta when they try merely to understand objectively this science of life. The moment a student tries to experiment with this knowledge herself or himself subjectively, the explanations contained in the theory become evident. Maya is the conditioning through which "one reality seems to fan out as the spectrum of the complete universe."[172]

In the science of the *Vedas*, maya is identified as a specific type of bala. Various bhavas (dispositions) which arise in rasa because of its association with bala remain an enigma. From where do these states arise? How and whence do they disappear? It is impossible to solve these puzzles. This is where we find maya, for maya is the term which covers that which can be seen in this universe but cannot be explained. For instance, when we suddenly see an effect but are unable to locate its cause, such a phenomenon is described as maya. Although it is something inexplicable, it does indicate a certain relationship between cause and effect. Just as in English we may use the word 'mirage' to describe something which

appears but is not real, the seer-scientists in the *Vedas* use the term 'maya' to describe a phenomenon which appears before our senses but which we are unable to explain.

As noted above, maya is a category of bala. The dharmas (fundamental properties and essential attributes) of maya bala are completely contrary to those of rasa, so that it remains a riddle how this bala is born from rasa (which is unique) and how it interfaces with other types of bala. Therefore, the term maya is used to describe bala in a generic sense. In fact, both bala and its interfaces are covered by the term maya.

The three most well-known forms of maya are the general state of maya, *mahamaya* and yogamaya. (Some seer-scientists have called yogamaya *vishnumaya*.) Two specific essentials emerge when bala interfaces with rasa in the same way as an object relates to its glow or radiance. These essentials are *matra* and *sanstha*. Matra (also an evolution from the root ma) signifies any kind of measure and is indicative of quantity, size, duration, number or degree. It is also a metrical unit, a mora which is a unit of metrical time equal to the duration of a short syllable, or a prosodial instant.[173]

The concept of matra can be comprehended by considering the use of this term in Sanskrit grammar, where it indicates the length of time required to pronounce a short vowel. "A long vowel contains two matras and a prolated vowel contains three."[174] In the case of language, therefore, matra defines the contours of letters of the alphabet and syllables, limiting the sound within a certain specified parameter. The matra which is confined within those contours is sanstha. To put it another way, sanstha is that which is held together, and matra is what does the holding. So a feature which limits or creates boundaries is called matra, and the rasa (or substance encased within those limits or boundaries) is sanstha. The process of creation has continuity by virtue of the interface of matra and sanstha.

Bala is limited in itself. When it interfaces with the limitless rasa, it gives rise to a sense of limitation in rasa too. This is like the perception of a wave in the expanse of water in a vast ocean. The sense of limitation in rasa arises from the matra aspect. Sanstha is the limited nature or form of rasa which becomes discernible because of bala's attribute of limitation. These two traits reveal the relationship of bala to rasa. The term 'maya' is used to define these characteristics, since this is a means of measuring the limitations of the basic tattwas or fundamental essential 'elements' which are the source of creation.

We have noted earlier that there is no notion of limitation in rasa yet, despite this, a perception of limitation arises in it. It is impossible to explain exactly how this happens, and so we use the term 'maya' for this inexplicable cause-effect relationship. An individual or phenomenon which is bound by maya in the universe acquires the name sanstha in the Vedic texts.

In Vedic usage, the term chhanda (metre) covers the concepts of matra and sanstha. *Chhanda shastra* is metrical science,[175] and chhanda is also indicative of the *Vedas*.[176] The *Bhagwad Geeta* states that "the wise people speak of the indestructible peepul tree (*ficus religiosa*) having its roots above and branches below, whose leaves are chhandas (vedas); he who knows it is a veda knower."[177] Matra and sanstha are two aspects of chhanda, in the sense that the limitation induced by direction, location and time is *matra chhanda*, and the entity, letter of the alphabet or individual encased or limited by these boundaries is *sanstha chhanda*. Let us illustrate this notion with the example of a circle. It has a circumference which defines its contours, within which is the space described as a circle. The circumference is indicative of matra and the encircled space is indicative of sanstha. This is why that which is encased

within the parameters of a circumference, ie. sanstha, is sometimes described as *vritta* (a circle).

The term chhanda is used in *Yajur Veda* in several mantras which describe its parameters and number of syllables in various metres.[178] The mantra *ma chhandah prama chhandah*[179] also lists several metres which indicate the measure of supraphysical energies. In the science of creation, the process of limitation known as maya fashions each different jati (species), akriti (form and appearance) and *vyakti* (individual). This process of defining contours, traits and characteristics is executed by *varna chhanda* (the classification of species according to their specific traits) and matra chhanda, and the varna system is fashioned from that. The *Brahmana* texts point out that the people called brahmana were made by *gayatri chhanda* and the kshatriyas by *trishtup chhanda*.[180] The form of every varna is made by matra chhanda, and one whose form is thus delineated is known in the shastras as purusha. In other words, purusha is the tattwa which is not subjected to limits.

Brahma, who is permeated with amrita and is in the form of rasa, has no limitations. A sense of limitation is introduced to facilitate the specific presentation of transient attributes. The association of matra is only to facilitate familiarity with rasa, which would remain unknowable in its limitless state. In this sense, it performs the functions of upadhi, which is anything that has a mere name or appearance; it is a peculiarity, anything defining an individual more closely. This makes it merely a discriminative appellation, for in reality there are no divisions or parts in rasa.

However, the association with matra creates an illusion of parts. For example, the vast space of the sky is limited in a small vessel or pot within which there is space. As soon as that vessel breaks, the limited sense of space within it and the limitless space outside become one and the same. Space is

single and continuous, and may be apparently enclosed within the pot without in any way harming its unity and continuity. When the pot is destroyed and the space enclosed in it merges into space in general, it would be wrong to assume that space had developed 'parts', being both enclosed in the pot and also outside it.

In the relationship between two individuals, we often come across a situation in which the factors applicable to one are not necessarily applicable to the other. For example, let us take the formulation 'where there is smoke, there is fire'. It is not necessarily true that wherever there is fire there would also be smoke, for smoke only arises when wood is damp. This is the upadhi factor, that which is vested in the cause but is not found in the effect. Upadhi is an adjunct to the principal individual. In our illustration smoke is upadhi and fire is the principal individual. When upadhi is removed from maya bala, the illusion of multiplicity vanishes.

As we have seen before, rasa is eternal, enduring and indivisible. This fundamental nature would be diluted if one were to assume that the parts which arise in it are real. An element of impermanence would then be injected into a phenomenon which is eternal and enduring. So we should assume that the divisions or parts which appear to arise in rasa are merely upadhi, adjuncts only discernible in the effect owing to their presence in bala (the cause) and not in rasa.

Two categories of force operate in the process of creation: the force of amrita (unchangeability) and the force of mrityu (constant change). The latter is a category of bala, and numerous forms of this bala (mrityu) arise in the interface between amrita and mrityu. Some of these are very tiny, subtle and fine, while others are extremely large, crude and gross. These and other balas, which evolve in the process of creation, are what cause rasa amrita to appear to be divided into numerous parts.

Mrityu[181] usually covers a very small area, almost as minute, subtle and fine as an atom. Yet it is the progenitor of other balas, with which it mixes and fuses. Consequently it may manifest in both a tiny form like an insect and a massive form like an elephant. Because of this, rasa also appears to be either tiny or huge, or anything in between.

The function of maya is to bring an individual within limits, and such an individual is known as *mayee*. This is Ishwara, the master of maya. Ishwara, who is limited or bounded by maya, is in reality all-pervasive. A map outlines the contours of part of a vast land mass, and in so doing performs the function of maya; the larger area, of which a small part has been mapped, is mayee (Ishwara).

THREE TYPES OF INNER CONFIGURATIONS

Three kinds of interaction and interface in rasa give rise to three inner configurations, which are known as bandha, yoga and vibhooti. The process of creation continues incessantly as a result of the bandha interface of wak, while prana remains active in the yoga interface, and mana always remains geared up owing to the vibhooti interface. Rasa is predominant in mana; rasa and bala are present in equal measure in prana; and bala is dominant in wak, despite a covering of rasa. These three are the inner formations of atma, and through them the imaginings, ideas and thoughts generated in atma become applicable to life in this world.

Students of the *Vedas* (especially the *Brahmana* texts) are conversant with the formulation that atma is permeated with mana, pervaded with prana and filled with wak. In the worldly usage of these terms, mana is the abode of awareness, prana is the source of activity and wak is the source of all substance or matter. Mana, prana and wak can be perceived as the source

or pre-physical state of mind, energy and matter. All beings which have a body experience these functions of mana, prana and wak in their bodies.

Awyaya purusha is the fundamental cause or source of these three. Kshara purusha evolves on the basis of the wak aspect of awyaya purusha, which is why wak is described as the 'mother' of all living beings. Wak is the source of the evolution of the five mahabhootas (basic elements); and wak is also the origin of sound.[182] When wak dominates, it covers rasa so that bala alone remains discernible. The process of creation continues with the mediation of wak in the bandha interface; prana becomes operational in the yoga interface; and mana pervades in the vibhooti interface. Thus, the process of creation of atma takes place in these three streams.

Mrityu bala assumes numerous forms and is in a state of continuous change in the atma which is in the form of rasa. The organisational order of atma is called *aabhava*, meaning 'that which is related to *abhu*'. Abhu means 'pervasive', and that which is generated in abhu is abhwa, which is bala. The influx and exodus of bala continues in aabhava, and bala continuously changes within its inner structure.

Abhwa conveys the meanings of wonderment, awfulness and transitory impermanence. As something which was non-existent prior to its coming into being, it evokes a sense of wonder when it is first noticed. Because no one knows from where it emerges when it comes into being, and also because it seeks to separate, and does indeed split from atma, it is considered awful. Modifications arise in atma because of abhwa. It is the cause of the name, form and functions of an individual, creating distortions in what would otherwise be an unbroken, harmonious and homogeneous phenomenon. Abhwa is also called *yaksha*, a term which Western scholarship erroneously translates as "a living supernatural being, spiritual

apparition and a ghost or spirit".[183] Yaksha actually stands for something that is terrible. It is so described because it is impermanent and causes modifications in atma. For this reason, persons following the path of Self-realisation are advised to keep away from yaksha.

Abhwa bala is also known as *yakshatma*. Although it survives on the support of atma, it is considered desirable that atma should remain a little distant from it. We can comprehend this 'distance' between atma and abhwa if we extrapolate it as the relationship between Self — the seat of consciousness — and the name, form and function of an individual. Consciousness is a reflection of atma, while the name, form and functions are reflections of abhwa. Although these are certainly related to each other, the seer-scientists considered it desirable that name, form and functions should not be allowed to prevail over the Self. Knowledge, or consciousness, should not become so attached to or dominated by these attributes that the latter become primary and the former relegated to a secondary position. Serious distortions occur in one's consciousness if this happens.

This three-dimensional abhwa (name, form and functions being the three dimensions) evolves from Brahma. Abhwa bala's operations give rise to changes and modifications in Brahma, and the bandha interface of these various operations creates the name, form and functions. Brahma is the basis of all of these. The name, form and functions are known as abhwa or yaksha, and they are produced again and again on the basis of the eternal and enduring Brahma, permeated with amrita. They arise out of the interweaving of karmas (actions). No action can take place without a basis or platform, which is Brahma. While investigating the nature of this phenomenon, Vedanta states that although awareness (or the faculty of cognition) in its pure state remains without limiting

traits, it is the basis of the coming into being of the entire universe.[184] In this context, maya becomes the source of all limitations, modifications and defining attributes of an individual, such as its name, form and functions.

Mrityu abhwa (which manifests as name, form and functions) never ceases to exist because it rests on the enduring amrita. Therefore, mrityu survives as amrita. One could say that Brahma, which is permeated with amrita and surrounded by mrityu, acquires different names, assumes various forms and performs numerous functions. Since names and forms change continuously, they have the property of mrityu; but they are based on the enduring, permanent, unchanging amrita.

If something exists, it must have a form. If it has a form, it will have a name. If it has a form and a name, it will have a role, purpose or function. We can illustrate this with the example of a piece of cloth used for covering the body. When this piece of cloth — say, a shirt — becomes old and is torn to pieces, it no longer bears its old name of 'shirt', because it can no longer cover the whole torso — it may now be able to cover only a part of it. Then it is torn further and reduced to threads, acquiring the name 'thread'; now it can perhaps be wrapped around the little finger. It can also be reduced to even smaller shreds. However, its function of floating in the air and covering objects with dust will remain. Cotton grows from the earth, and thread is made from cotton. Cloth is woven from thread, and a shirt is made from cloth. Thus name, form and functions continue to change. When we see a shirt, we do not think of the earth, although in one sense the process started from there. So name, form and functions change but they never cease to exist, because they are based on amrita which is the fundamental tattwa of rasa. Balas emerge and disappear but rasa remains unaffected.

Bhava is a specific type of bala related to form, and is the result of the swaroop interface. Bala associated with the vrittita interface — which generates force, power or tendencies — is called karma. From a vast quantity of water in an ocean, a small portion is diverted and stocked in a rectangular tank. The rectangular structure is the result of the swaroop interface, while the water in that tank is the manifestation of the vrittita interface. The form of a rectangular structure acquires the name 'tank'.

Name and form are inherent in bhava, and matra and sanstha are included in the two categories of swaroop and vrittita. They both define the limits and remain confined within them. As soon as an individual is given a name or its form is outlined, the name and form lay down its contours. At the same time, they remain within the limits that they have laid down. When cotton is given a name, for example 'shirt', its contours are laid down and its form is defined. When these contours have been defined, a shirt has to remain within those limits for as long as it bears that name and remains a shirt. If cotton is given another name, such as a bedsheet, different contours are laid down and its form is defined. For as long as it bears that name, the bedsheet will remain within the limits of those contours.

'Form' in this context does not mean merely, say, a colour such as blue or white. It also includes size, weight and volume, and functions arise from these traits. For example, the 'potness' of a pot resides as a shape, form or outline. This 'potness' is not separate from the pot. The name, form and function reside in the entire pot, which acquires the name 'pot' as a result of the area delineated by its form. This measure — the area — separates it from other objects. The form of the pot incorporates both matra (the measure) and sanstha (the structure), and the combination of the two is the 'potness' of the pot.

We know that mind illuminates, and therefore mana (mind) is a manifestation of light. The bala related to it has the attribute of defining the form. Bala related to prana is associated with motion and therefore generates actions or functions. And bala related to wak gives an object its name. These three types of bala are called maya bala. (In this instance, the meaning of the term 'wak' which is related to speech is also included, because a name is something which is spoken.)

The first contact of the three abhwas of name, form and function with Brahma is like an uninterrupted, eternal flow. This eternal aspect is located in awyaya purusha and akshara purusha, and these two are encompassed by the term para purusha. The abhwa is three-dimensional in kshara purusha, a state in which rasa appears to have become distant. (It should be understood that rasa does not exist in kshara.) At this stage an object acquires something like an independent and distinct existence. At the 'birth' of an individual or an entity, wak vests a name, form and functions in it. The individual or entity is perceived to exist by virtue of fusion with the three-dimensional abhwa. When wak becomes disassociated from it, the individual or entity ceases to exist. Both the sense of existence and the cessation of existence are related to mrityu, since they are transitory.

We perceive no end of differences in worldly entities and objects. These exist because each object and individual has a distinct name, form and function, comprising its specificity. Many distinctive features or specialties are also vested within the one individual or entity. If two actions — the karma flowing from rasa — join or blend with each other and slip from their abhwa, they acquire a new entity, dissolve their own form and acquire a new one. That new form then acquires a new name, form and function.

As stated earlier, maya is that bala which gives rise to the illusion of limitation in rasa. Mahamaya gives rise to name, form and functions, causing an expansion and proliferation of objects, and covering rasa with limiting traits. Yogamaya (another variation of maya) becomes operational when two entities join. When bala becomes predominant, rasa is also known as bala. When the two blend or join, both lose their own identity and a third, new abhwa begins to flow. This new bala acquires a new name, form and function. For example, the bark of a tree blends and interacts with raw sugar to become alcohol.

Shrimad Bhagwad Geeta emphasises that yogamaya completely covers atma,[185] and points out that awyaya does not become manifest because it is covered by yogamaya. However, "since it belongs to awyaya, it does not obstruct the knowledge of that ultimate tattwa just as the magic of the magician does not cover his knowledge."[186] And as explained in *Rasapanchadhyayee* — a popular section of *Bhagwad Purana* in which the playfulness of Bhagwan Krishna has been described with great sensitivity and beauty[187] — these verses describe how Bhagwan creates an environment of pleasure with the aid of yogamaya.[188] However, a deeper look at these verses reveals the scientific principles of the *Vedas*, presented here in a popular style. We humans acquire our qualities with the aid of our senses, mind, body and so on, all of which can only function because of yogamaya.

Maya has been much explored in various schools of darshana. It is the first manifestation of the creative process whereby *aham* (Self) and *idam* (the objects comprising the universe) do not refer to the same entity and hence involve duality and, subsequently, multiplicity. Maya apparently breaks the unity of the Universal Self, but retains its distinctive power in its creative aspect.[189] It manifests diversity

independently of any external instrument.[190] Maya is conceived of both as *moha* (the power of confusion and obscuration) and as the primary cause of limited manifestation.[191] Whatever manifests as apparently separate from the Universal Self is essentially maya. As the cause of the universe, it is pervasive.[192] Maya brings about the ignorance of our real nature, and the consequent imperfection in our powers of knowledge and action. Maya is that shakti (the highest form of energy, force or power) to which the entire universe is reduced and in which it is ultimately submerged.[193] It is also prakriti, the creative power from which the entire universe emanates.[194]

This brings us to a discussion of shakti, a term which is generally translated as 'power', 'energy' or 'force'. In our chapter on the nature of the interface of rasa and bala, we explore a specific form of interaction and relationship between a supporting entity and a supported entity, in which the latter does not generate any traits in the former. Shakti is that bala which becomes linked to rasa (vested with maya) in this form of interface. Shakti is also known as 'nature', 'spirit' or 'disposition', terms which convey its various aspects. When maya bala is flowing in rasa, another bala may join in a vrittita interface.[195] That bala, along with the bala it interfaces with, is called shakti.

Shakti generates anna ('consumables') for the atma which is its basis or foundation. The classification of individuals as annada ('consumer') and anna ('consumable') relates to their locus in the process of yajnya in the supraphysical universe. When supraphysical energy is 'offered' as a consumable in another supraphysical energy, this offering is known as yajnya and the specific activity is described as *havana*. The individual offered in agni (the fire) is in the category of 'consumable', while the agni is the 'consumer'. This relationship of

consumer and consumable is the key to understanding the process of creation.[196]

Shakti's relationship with atma and amrita's relationship with mrityu are both dialectical, in that at times one is dominant and at other times it is secondary. However, they remain intertwined with each other throughout. Atma becomes manifest, evident and discernible because of its association with shakti. If we take the example of a human being, the personality of the individual becomes manifest through the energy and drive in that person. In that sense, the person and her or his energy remain intertwined. That energy is the motive power of all the individual's actions, and generates all that the person consumes or enjoys.

Karma (bala) generates 'consumables' for the consumption of atma, and is called the shakti of atma. Purusha never exists without shakti, and the *Vedas* talk of purusha being vested with shakti. This is why the 'consumables' generated by shakti for atma are known as purushartha — 'that which is intended for purusha'. There is a state in which the amrita tattwa, permeated with rasa, is present in approximation as a 'witness' only. In this state, rasa is not conditioned or circumscribed by bala. This state is beyond all motion and karma, and purusha is superimposed on rasa. As a result, bala is unable to cause any differentiation in that rasa, for differentiation only takes place when shakti bala connects with rasa and begins to qualify it. Rasa vested with bala acquires the name 'purusha'.

As we have seen, rasa and bala are entwined from the very beginning and can never be separated. Their relationship is not even that of primary and secondary, nor of an attribute and an individual whose attribute it is, for both arise as dharmas (attributes). A product which is born of the association of rasa and bala acquires the characteristics of rasa. The purusha

disposition of rasa vested with bala is the first formation to appear in the process of creation, the coming into being of the cosmos.

Abhigatena hi prerita wayawah stimitani
Wayawantarani pratibadhamanah
Sarvato dikkan sanjog bhigam utpadayanti
Yawad vegam abhipratishante

MEEMAMSA SUTRA 1:1:13

What happens is that the air particles disturbed by the (sound-provoking) stroke clash with the stagnant air particles and produce conjunction and disjunctions (ie. ripples) on all sides, which go on spreading for as long as the momentum lasts.

Samanjantu vishwe devat sama apo hridayam nau
Sam matarishwa sam dhasa sama deshti dadhatranam

RIK VEDA 10:84:47

All the supraphysical energies of the cosmos as well as apa blend with matarishwa and thereby integrate together into an individual.

Matarishwa

a supraphysical airstream

AGNI, SOMA, INDRA AND PARMESHTHI ARE THE centres of their own supraphysical regions. They are like stars at the centre of a galaxy. As students of modern science know, a galaxy is any one of the billions of systems of stars and interstellar matter which make up the cosmos. Galaxies vary considerably in size, composition and structure, but nearly all are arranged in groups, or clusters, and some of these have as many as 10,000 members. The distance between galaxies within a cluster averages approximately 1,000,000 to 2,000,000 light years, and the spaces between clusters of galaxies may be a hundred times greater than that. Each galaxy is composed of innumerable stars — most have anything from hundreds of millions to more than a trillion stars.

Virtually all galaxies appear to have been formed soon after the universe came into existence. Some galaxies are grouped in larger clusters measuring hundreds of millions of light years across. (A light year is the distance traversed by light in one year, travelling at a velocity of 300,000 kilometres per second, or 650,000,000 miles per hour.) These so-called 'superclusters' are separated by nearly empty voids. Some galaxies are rife with activity while others are quiescent.

The existence of galaxies was not recognised until the early 20th century. Since then, however, galaxies have become one

of the focal points of astronomical investigation. Much attention is also devoted to the Milky Way Galaxy, as the local galaxy to which our sun and earth belong. The Milky Way Galaxy — sometimes simply called the Galaxy — is a spiral system consisting of several billion stars, one of which is the sun. Although the earth lies well within the Galaxy, astronomers do not have as clear an understanding of its nature as they do of some external star systems.

It is important to keep these findings of modern science in mind while reading this chapter and constructing in our minds a picture of the supraphysical domain and the 'galaxies' and 'stars', as it were, which form part of it. The importance of water in the structure of our universe also needs to be kept in view. Water is the most abundant substance on the surface of the earth. About 1.4 billion cubic kilometres (326 million cubic miles) of water in liquid and frozen form make up the oceans, lakes, streams, glaciers and ground waters found here. This enormous volume of water, in its various manifestations, which forms the discontinuous layer enclosing much of the terrestrial surface is known as the hydrosphere. Central to any discussion of the hydrosphere is the concept of the hydrologic cycle. This cycle consists of a group of reservoirs containing water, and the processes by which water is transferred from one reservoir to another (or transformed from one state to another). These transfer paths penetrate the entire hydrosphere, extending upwards to approximately 15 kilometres in the earth's atmosphere and downwards to depths to the order of five kilometres in its crust.

Modern science believes that the earth was a bleak place before the coming of life, a rocky globe with shallow seas, a thin band of gases and water vapours. This strictly inorganic state of the earth is called the geosphere; it consists of the lithosphere (the rock and soil), the hydrosphere (the water)

and the atmosphere (the air). Energy from the sun relentlessly bombarded the surface of the primitive earth for millions of years, until chemical and physical actions produced the first evidence of life which could collect energy from the environment and produce more of its own kind. This generation of life in the thin outer layer of the geosphere established what is called the biosphere, the zone of life, an energy-diverting skin which uses the matter of the earth to make living substance.

The biosphere is a system characterised by the continuous cycling of matter and an accompanying flow of solar energy in which certain large molecules and cells are self-reproducing. Water is a major predisposing factor, for all life depends on it.

According to Vedic science, the supraphysical region of parmeshthi is like a vast ocean of apa, a supraphysical liquefied state of that which we see as water in the physical state. All creations begin with apa as it becomes intertwined and integrated with atma.[197] Before the emergence of apa tattwa, the process of creation through the interface of male and female principles or from the womb of an individual does not take place. Therefore, the tattwas which emerge in Brahma before the advent of apa are not included in the process known as creation. These tattwas are the vedas. The foundation of prajapati (the first 'individual') and the process of creation do not begin until the coagulation of supraphysical energies takes place and the first 'individual' emerges. Brahma is in a state of all-pervasive prajapati before the emergence of the Vedas, which begin the pattern of consolidation within it and set in motion the process of creation.

Matarishwa is a special type of airstream surrounding the apa ocean; it also surrounds the prajapati which has existed in the form of prana. Prana, as we know, is primal supraphysical energy,[198] which sometimes expands and

sometimes contracts and in the process soaks up the apa (water) which has been surrounded by matarishwa.[199] The *Rik Veda* alludes to matarishwa and its functions in a beautiful mantra, in which a gorgeous bird, *suparna*, with exquisite wings enters that ocean of apa. He is the maker of this entire world, and atma receives this matarishwa like a mother, with great affection, embracing him fondly so that he becomes totally merged with atma.

This mantra expresses the mutual blending of the various tattwas which comprise apa. So apa is given the position of mother of the entire cosmos, and prana is the offspring of this mother.[200] The structure of atma, in which prajapati arises, has been outlined in the chapter "Seven Purushas and Prajapati", where we have described it as possessing wings, back and tail. Suparna is indicative of the tail in that depiction.

Atma blurs the clusters of apa from which all sentient beings are born. If matarishwa, moving in atma, fails to locate and absorb the supraphysical substance of apa from anywhere else, it then disburses a few units of apa from its own 'pool'. Apa is located in atma in all creations which result from an act of intercourse. Matarishwa causes the placement of sperm in the ovulated secondary oocyte.[201] Fertilisation occurs when the sperm fuses with an egg to form a fertilised egg or zygote ('yoked together'), and this is the first cell of the new individual. Thus, in a sense, matarishwa causes the fertilisation. This process of the birth of a living being from intercourse between male and female is elucidated in the aphorisms of Vedanta,[202] and matarishwa's function is described in the *Yajur Veda*.[203] This mantra defines the symptoms of atma in three of its four quartets: it is *anejad*, namely there is no movement or fluctuation in it; and it is *manaso javeeya*, that is, atma is faster than mana (the mind). Even the supraphysical energies are unable to grasp it because

it is present everywhere and it exceeds the fastest of runners. Matarishwa places the apa tattwa in such an atma.

In this process of creation — the birth of a new individual — atma assumes a form like the ovaries and duct system in a female body, and matarishwa accomplishes the placement of sperm in this atma. The ensuing interaction gives rise to something like a knot or a lump in the apa cluster. The 'formation of the knot', which is in the nature of the implantation of an embryo, is the first creation in atma in the case of all 'births' resulting from intercourse. This class of species does not exist before the advent of the supraphysical substance of apa.

Rik, yaju and sama are different dimensions of Brahma. As we have noted earlier, Brahma is all-pervasive. These three bring about a coagulation of supraphysical energies in the form of prajapati and there is no possibility of creation until this happens. Up to that time prajapati exists in a limitless state. It is only when apa inveigles itself in atma that the subsequent process of creation begins.

The *Vedas* mention four supraphysical energies[204] which function as sperm, prana, atma and the factor responsible for supporting these three. These special supraphysical energies facilitate the birth of all sentient individuals. The basic material cause of creation is the cluster of apa, which matarishwa places in atma: "This gross liquid is in its initial stages in the form of apa."[205] When placed in atma by matarishwa, that apa cluster confines prajapati within a defined contour. Encapsulated within a defined chhanda (metre), it acquires a separate identity as a component of atma. This is the reason why creation taking place from apa clusters is described as 'evolving from atma'.

Since this prajapati is a product of clusters of apa, it predominantly comprises apa prana.[206] This supraphysical

energy, which is known as *apya* ('stemming from apa'), satiates its hunger with clusters of apa. In other words, apa clusters are its food, and this is also reflected at the physical level. When we feel weakened by our physical endeavours, there is a consequent diminution of our apa tattwa (discerned as water in the physical state), and we recoup energy by drinking water. Of course, at the physical level we have to arrange for the intake of water; but at the supraphysical level this 'loss' is compensated for automatically, so that the illuminating atma is not extinguished. If we are not able to find water (in which apa tattwa is inherent) to drink, the prana evolving from apa is constricted and becomes weak, resulting in an experience of great discomfort. At this stage prajapati atma tends to leave the body. However, we manage to obtain some relief at the last minute from the apya prana which circulates in outer space.

Prajapati (in the form of atma) is the support of the individual. "Atma is integrated in the body from nails to hair. It resides as a knife resides in the holder. It lives [in the same way] as the master of the family of the universe resides in the universe. When in motion it is called prana; when it speaks it is called wak; [it] sees as the eyes, hears as the ears, reflects as the mind. These are all functional names for atma."[207] Those who view atma as one of these functions do not know the reality, for atma is complete and comprises the totality (of all its functions). It is the foundation of all the senses, the mind and so forth; and all supraphysical energies reside in it. This is why we should harness atma. The seer-scientists say that atma can be gained "if you walk towards it." In other words, we can gain it step by step. Since atma is the regulator of mana and prana, when the mind is engaged in investigating atma it travels on the road to fulfillment.

The principal prana maintains the balance of the body, pervading both right and left portions from navel to neck. The

supraphysical energy which flows into the body is prana, and that which is expelled is apana. We humans discern these energies as the breath. (The term 'prana' is used both for the generic category of supraphysical energy and also for its manifestation in the body as breath.) Indra and agni are prana and apana respectively.[208] Seer-scientist Barkali has calculated — in question and answer format — the number of times a human being breathes. He begins with the question: "How many breaths does a person take in the course of the day's exertions, moving from one place to another, standing or sitting or in the state of sleep?" He then proceeds to answer: "10,800 breaths during the day and the same in the night. In total this comes to 21,600 breaths."[209]

Reference has been made elsewhere to three types of prana — deva prana, pitri prana and bhoota prana. According to the seer-scientists, deva prana emanates from apa tattwa and from the moon.[210] The reference to apa here is indicative of the parmeshthi region, which we have already understood as being permeated with apa. The cluster of apa called *ambhas* is related to the moon.[211] Deva prana is injected into the cosmic system from both this apa and the moon. A yajnya[212] takes place at this point as a supraphysical energy, of the soma genre, is consumed in vaishwanar agni. This agni is a supraphysical energy produced by the fusion of the three basic supraphysical energies which sustain the earth, the sun and interspace.

The supraphysical energy of the soma genre, which is consumed in vaishwanara, is known as brahmanaspatya. Two categories of supraphysical energy are produced when it is offered as an oblation in vaishwanar agni, one of which is deva prana.[213] This class of supraphysical energy seeks to subdue prana and apana, each in turn, operating in the cosmic domain. Since the human body is a prototype of the cosmic structure, deva prana operates in the human body also, where it flows

towards the heart. In the cosmic structure it rushes towards the centre; on reaching there and receiving a rebuff from apana, it returns towards the sun. This returning prana is known as *udana*. Prana and udana are generally used in the context of their operation within the human body; they are called *mitra* and varuna in the supraphysical domain. The former possesses the trait of fusion and the latter of fission. In other words, mitra attracts and joins while varuna removes and repels.

Following its clash with deva prana, apana flows towards the earth where it is absorbed in the human body and becomes known as *samana*. An extremely important prana flows into the human body from the parmeshthi region. This is called *vyana* and is the first to flow into the body and make a place for itself there. Prana and apana then follow suit.

To summarise, the five pranas are prana, udana, samana, apana and vyana. (The vyana prana which pervades the entire body springs from apa.) It is generally believed that the life-force rests on the basis of prana and apana, but this is not true. "No sentient being on this earth can survive only on the support of prana and apana. The life-force is derived from that which provides the support to these two."[214] In the absence of vyana prana, prana and apana can have no existence in the body, for vyana supports them and thus enables them to sustain the life-force. Vyana, as mentioned earlier, is linked to the parmeshthi region.

This discussion of the flow and 'clash' of supraphysical energies underlines the importance of parmeshthi in the cosmic matrix. As stated earlier, parmeshthi is permeated with apa tattwa, the supraphysical state which we discern as water in the physical domain. In that sense, it signifies the predominance of water in the cosmic organisation. Before we close this chapter, we must emphasise that while there is a

link between the physical and supraphysical domains, we need to radically reconstruct our minds in order to picture the operations of the supraphysical energies. We must attempt to visualise them as the subtle sources from where physical individuals emanate.

One form of energy is convertible into another form in the physical domain. In the supraphysical domain also, the same energy acquires different names and properties as it flows from the sun to the earth or floats in the space inbetween. The clash between various forms of supraphysical energy has been portrayed in the *Puranas* as the battle between the devatas and asuras. Devatas are the solar energies and asuras are the supraphysical energies related to the earth; their interaction is described in terms of a battle. Solar supraphysical energy is portrayed as white and illuminating, while the earthly supraphysical energies are depicted as dark. Darkness disappears in that portion of the earth which faces the sun. This phenomenon is expressed in the metaphor that the asuras are vanquished and the devatas are victorious.

The supraphysical airstream of matarishwa plays a highly significant role in the emergence and evolution of these supraphysical energies described above. And, as we have seen in this chapter, it is also a critical factor in all forms of creation, both physical and supraphysical.

Esha sarveshu bhooteshu goodha atma no prakashate
Drishyate tu agraya budhya sookshmaya sookshma darshibhi

KATHA UPANISHAD 1:3:12

It is hidden in all individuals and does not manifest as goodhatma. Those who can discern subtle entities 'see' it by their sharp and focused insight.

What Happens to Atma After Death?

DEATH IS AN ENIGMA, A RIDDLE WHICH MODERN science has been unable to solve so far. What happens after death is a subject of continued controversy. To the modern — that is, Western — mind, death evokes fear. This is a dread of the unknown, of complete and utter dissolution, of being no more. It is the fear that a person's identity will be obliterated.

Modern medical science has focused on delaying death as far as possible. These efforts have created considerable confusion as to what death is and when it should be assumed to have occurred. Many dictionaries define death as "the extinction or cessation of life" or as "ceasing to be". Since life itself is notoriously difficult to define — and since everyone tends to think in terms of that which is known — the problem of a definition of death is immediately apparent.

The most useful definitions of life are those which stress function, whether at the level of physiology, molecular biology and biochemistry or of genetic potential. In the context of this definition of life, death should be thought of as the irreversible loss of such functions. At the clinical level, death is regarded as the irrevocable cessation of circulation and loss of function of the organism as a whole. There is a continuing controversy, however, in establishing beyond all doubt that the point of no return has been reached. Cessation of the

heartbeat is only lethal if it lasts long enough to cause critical centres in the brain stem to die; the brain stem is irreplaceable in a way the cardiac pump is not.

Is death the irreversible loss of function of the whole organism (or cell); that is, of every one of its component parts? Or is it the irreversible loss of function of the organism (or cell) as a whole — that is, as a meaningful and independent biological unit? Individuals die while their cells, perversely, continue to metabolise. Cells can be disrupted yet the enzymes they release may remain active for a while. Similar problems arise, although on a vastly larger scale, when the brain is dead but the heart (and other organs) are kept going artificially. Under such circumstances, it can be argued, the organism as a whole may be deemed dead, although the majority of its cells are still alive. Modern scholarship is also in disagreement as to whether death is a process or a state. For instance, the *Concise Oxford Dictionary* defines death both as "dying" (a process) and as "being dead" (a state).

Uncertainty — and some controversy — as to when death has actually occurred are by no means new. The failure to establish beyond all doubt that the point of no return had been reached has had interesting implications through the ages. The ancient Greek historian Herodotus tells us that the Thracians kept their dead for three days before burial. The Romans kept the corpse considerably longer, as the Roman author Servius records: "On the eighth day they burned the body and on the ninth put its ashes in the grave."

In classical Judaism, death closes the book. As the anonymous author of *Ecclesiastes* bluntly put it: "For the living know that they will die, but the dead know nothing, and they have no more reward." (*Eccles*. 9:5) The death of human beings was considered like that of animals: "As one dies, so dies the other. They all have the same breath, and man has no

advantage over the beasts... all are from the dust, and all turn to dust again." (*Eccles.* 3:19-20)

Views on death and what happens thereafter are deeply rooted in the cultural beliefs of various peoples. When Jewish society entered the phase of consolidation, each of its components brought to the new community its own customs, often based on beliefs in an afterlife.

Death is at the very core of the Christian religion. Not only is the cross to be found in cemeteries and places of worship alike, but the premise of the religion is that humans have forfeited immortality by their own actions. Through abuse of the freedom granted in the Garden of Eden, Adam and Eve not only sinned and fell from grace but also transmitted sin to their descendants: the sins of the fathers are visited on the children. And as "the wages of sin is death" (*Rom.* 6:23), death became the universal fate.

The basic premise of all the Quranic teaching concerning death is Allah's omnipotence. He creates human beings, determines their lifespan and causes them to die. From this perspective, the individual's fate (including the mode and time of death) appears inescapably predetermined. Death is repeatedly compared with sleep, which is at times described as "the little death".

If one seeks to marry prevalent conceptions of death as recorded by Western anthropologists and cultural historians with the most up-to-date observations from intensive care units, one might define human death as the irreversible loss of the capacity for consciousness, combined with the irrevocable loss of the capacity to breathe. The anatomical basis for such a concept of human death resides in the loss of brain-stem function.[215]

Notwithstanding voluminous studies about the beliefs and outlooks pertaining to death and thereafter in various cultures,

modern Western scholars have remained ignorant about the light thrown on this phenomenon by the seer-scientists of Bharatavarsha. In the principal and auxiliary texts of the *Vedas*, the processes culminating in the 'death' of an individual — that is, any object or entity — have been explored and explained in considerable detail. This chapter seeks to introduce the reader, very briefly, to these perspectives.

Death may be considered either as the end of existence or as a transition to another state of being or consciousness. Many people believe that total annihilation of the person does not occur when the human body ceases to be a living system, but that the person continues to exist in some respects. Given the versions of materialism which take bodily identity as the basic criterion of personal identity, the very notion of survival after death is completely unintelligible. However, by now our readers are acquainted with the supraphysical universe and its relationship to the physical universe, and with the functioning of the supraphysical energies which regulate physical energies. So it should not be too difficult to comprehend the ensuing exploration of the phenomenon of death and the functioning of the supraphysical energies thereafter.

According to the seer-scientists, an individual is an integrated and composite entity, not merely the body of the person you and I see. Beyond the body is the mind which experiences pleasures and sorrow, and beyond that is the intellect which decides, accepts and rejects. Underpinning this body-mind-intellect configuration is the atma, the substratum or foundation upon which the individual stands.[216] We have noted earlier that the corporeal organisation of a person comprises *bhautik* (the material), adhyatmik (the physical) and adhidaivik (the supraphysical) components. What happens to the person on his or her death? The material component is absorbed into the panch mahabhootas (five gross material

elements) of akasha (space), wayu (wind/air), tejas (fire), apa (water) and prithwi (earth). The solid matter merges into the earth, as dust mingles with dust; the liquid matter merges into water; and the space within the body unites with the wide space outside which pervades everywhere.

The supraphysical energy of which matter is made — wak — is absorbed into agni, the supraphysical energy of the earth; prana merges into the wayu (airstream); the capacity for vision fuses with aditya (a supraphysical energy emanating from the sun); the hearing faculty is absorbed in various directions; and mana (the mind) is absorbed into brahmanaspati and chandra.

Let us pause to meet these last two terms in brief. The universe is caused by a fusion of agni and soma, in which agni is like fire and soma the fuel which feeds it. The supraphysical individual of agni is divided into three, while the supraphysical energy of soma, which is consumed in agni to create the universe, is divided into two. The three principal dimensions of agni are brahma agni, deva agni and bhoota agni, and the two principal divisions of soma are brahmanaspati and *vritra*. These three agnis and two somas render our universe five-dimensional, with deva agni being the second in the sequence of the three agnis. *Pawamana soma* (also known as brahmanaspati) is established between brahma agni and deva agni.

Chandra (a shortened form of chandrama, the moon) is one of the five dimensions of the universe. Brahma agni gives rise to swayambhoo, the first of these dimensions, the other four being swayambhoo, parmeshthi, soorya (the sun), and prithwi (the earth). All those who are born (created) essentially emanate from the sun (*nonam janat suryano prakasata*). Rishi Shaunaka explains this in the *Brihad Devata* text.[217] This earth also emanates from the sun, as does agni, the supraphysical energy which sustains the earth. Rishi Shaunaka has articulated these principles somewhat differently.[218]

The union of the five gross material elements with these five dimensions of the universe marks the disbanding of the body and its associated energies and faculties. However, this does not explain what happens to atma, the substratum of the whole edifice. The purpose of this chapter is to explain where atma goes to, or what happens to it after the disbanding of the corporeal structure of an individual, signifying the death of a person. In the following sections we shall undertake a brief exploration of that aspect of the science of the *Vedas*, for which we are eternally grateful to the rishis.

Let us revisit the term 'atma' and its various qualifiers, such as prajnanatma, vijnanatma, mahanatma and hansatma, and examine it in the context of what happens to atma after death.

Every occurrence in an individual is a consequence of the pranas or supraphysical energies of devata and asura. They are compounds — products of the interaction or fusion of original pranas which are of the nature of a supraphysical 'element'. (In modern science, an element is a pure substance which cannot be broken into something simpler, while a compound is a pure substance made of atoms of two or more elements.) The 'elements' in the supraphysical domain are called rishis, and compounds made of rishis are known as pitaras.

Every 'individual' or 'substance' has 10 components,[219] and an aggregation of these 10 components is an individual or a substance. Collectively, these make wak, and a wak in which all the 10 components are present is called virat chhanda. Since every wak has these 10 components, each individual or entity in the cosmos is also called virat. And since the cosmos is the totality of these individuals, it is also called virat.

Although there are numerous rishis, the seer-scientists have only identified 10 of them. Seven pitaras are created from the fusion and interaction of these rishis. Devatas and asuras are produced from the fusion of pitaras; and every individual

in the cosmos is produced from the interaction, interface and fusion of devatas and asuras. These are all pranas or supraphysical energies, which combine with the five mahabhootas (gross material elements) to make a 'body'. This is how the process of creation continues. Every individual is a composite of body and atma, reflecting the rishis incorporated therein. Vairajatma emanates from Brahma. This is an aggregation of the 10 identified rishis, and may also include numerous other rishis which have not yet been identified. Vairajatma is also known as prajnya or prajnanatma.

After it comes into being, prajnyatma draws 'juices' from the sun and wind and absorbs vidyuta (electrical energy). With their help, it absorbs various material ingredients and makes a 'body', in the process of which a new atma is produced called hansatma. (*Hansa* means 'swan'; and the colloquial metaphor, "the swan has fled" is used to refer to the event of death.) Hansa is made of juices of the body and has the capacity to wander over long distances, while remaining 'tied' to the body. Imagine a bird flying in the sky, which is tied by a long thread to your hand. Although it can travel long distances, ultimately it must return to rest on your hand because you are holding the thread. Similarly, hansatma continues to search for the body while wandering higher and higher, but never fails to remember its links with the body nor is ever completely separated from it. In contrast, prajnyatma does not travel but remains within the body. Prajnyatma is the most dominant of the numerous atmas.

Prajnyatma is the supraphysical energy or prana of prithwi (the earth). It is the atma of the body. If the body is the chariot, it is the charioteer. Just as a chariot needs horses to drive it, so mana and prana perform the 'driving' function. Wak enables the power of speech of the organs, the nostrils enable breathing, the eyes facilitate seeing and ascertaining realities,

the ears help in hearing, and the mind engages in decision-making. These organs are merely gates to yet another factor which is responsible for articulating 'I see,' 'I speak,' 'I think,' 'I smell,' and so on. Prajnyatma is this 'I' factor. It is wrapped under the 'cover' of the seven pranas of mana, prana, wak, chakshu, stotra, karma and agni. The first five of these become manifest in sentient beings. Individuals such as trees have only the two 'covers' of karma and agni; and a totally inanimate individual such as a stone only has one 'covering', of agni. Prajnyatma acquires a body due to agni prana.

While prajnyatma is the same in every individual, mahanatma causes differences between individuals of different species. It is proximate to vijnanatma, and this proximity generates the three attributes of sattva, rajas and tamas. If we were to place a ball in front of a lamp, the illuminated portion would represent sattva, the shadowy portion rajas and the dark portion tamas. These three attributes constitute the nature of atma. Prajnyatma generates impulses and inclinations, but cannot stop these impulses from occurring. Thus, while it is not independent, the behavioural patterns of an individual are determined by the measure of mahanatma relative to that of vijnanatma.

In brief, the Vaisheshika school of philosophy defines only through bhootatma; Samkhya divides mahanatma into purusha and prakriti. Purusha, also called kshetrajna, is pure consciousness and prakriti is nature. The well-known seer-scientist Shaunaka elucidates chidatma, which is different from the three atmas explained above. And the Nyaya school focuses on two atmas, which it labels jeeva and Ishwara.

Hansatma (the perishable wayu or airstream) takes a new birth in the aemoosha airstream as a specific species. When its demise occurs it is dissolved into wayu (the wider airstream). Karmatma is tied to its acts of merit and demerit, and is thus

under the control of their consequences. As a result it travels to the respective domains of punya (merit) and papa loka (demerit). If it travels from the earth to Saturn, located in an opposite direction to the sun, this is described as a 'downward' journey. All journeys end in a destination, and in this case the outcome is often called 'destiny'.[220] The outcome of the downward journey is the domain of demerit, a region which is predominantly dark. This outcome is called a 'dark domain' and may also be described as *krishna gati* (a journey in darkness).

Conversely, the journey from prithwi (the earth) towards soorya (the sun) is described as an 'upward' journey, to the domain of merit. Since this region is full of light, this domain is called the 'bright domain' and the travel is called a journey into *shukla gati* (the luminous domain). After undertaking one of these journeys and going either to the upward domain or the downward domain — and after the consequences of actions of merit or demerit have run their course — another birth takes place. This occurs in the world where life is perceived as a short journey and death is the station where the journey comes to a halt. Therefore, this loka is known as martya loka or the domain of death. The entire cycle is known as *karma gati* or the cycle of the outcome of actions.

However, the investigation does not end here. The seer-scientists have penetrated the phenomenon of atma's destination after death much more deeply, exploring the outcome of its journey. We are only able to provide a brief overview of this subtle and specialised discipline in this work.

THE TWO TYPES OF ATMA

Atma is of two types: indivisible (like an element), and compound. The indivisible atma does not go anywhere because it is not limited in the confines of direction, region

or time; and only an individual possessing these limitations can undertake a journey. A tattwa such as this indivisible atma, which permeates everywhere, obviously cannot leave one place and go to another. So to look for the course of its journey is to search for the impossible. This atma does not lend itself to the specialised discipline of investigating *gati vidya* (the journey of atma and its outcome). However, the other, compound atmas (whose various types and categories we have discussed in previous chapters) do travel, and thus do lend themselves to an investigation by this discipline.

These atmas are a compound of various elements or components, which originate in various locations and aggregate to mould the shape of atma. Upon separating from the compound atma, they immediately return to merge with the genus of their origin. The process of various components of a compound atma returning to their respective genus is called the journey of atma and its outcome.

These journeys are of various types. Here we shall take the journey of bhootatma and its outcome, which itself is of 10 types. Bhootatma ultimately embraces one of these 10 outcomes. (Hansatma, being of the same genre as bhootatma, also travels, but its outcome is confined to one loka; similarly, devatma also travels to one loka only.) All the journeys of bhootatma fall into the two categories of *sansar gati* — the journey and its outcome in this world — and *samparaya gati* — journeys outside this world. Three lokas are specified for the transmigration of bhootatma: *manushya loka* (the domain of human beings); deva loka (the domain of supraphysical energies); and *pitri loka* (the domain of the ancestors). An atma travelling to a loka apart from these, such as brąhma loka, settles there and does not transmigrate further.

Until the atma is emancipated, it continues to travel in one of these three lokas. There are numerous divisions and

distinctions within these three lokas, and *jeevatma* — which is related to sentient beings, including human beings — travels to the various species of sentient beings after death. This transmigration from one species to another is what is known as sansar gati, or the journey and its outcome in this world. All other journeys and their outcomes are included in the second category of samparaya gati.

Samparaya gati is also of two types: *nitya gati* and *kala gati*. The body of a sentient being is formed from the amalgamation of various substances and the bonds which tie those substances together. These bonds are described as the 'knots' at the heart of a body, and the unravelling of them is what is known as the 'liberation' of atma. However, it is worth remembering that all the components which are tied together in a knot fly back to and become absorbed in their original locations — the genus from where they had emanated — as soon as the knot is unravelled. Their place is then taken by other tattwas in that knot.

We can best illustrate this through the example of the reflection of the sun in a pool of water. The sun's rays which travel to the surface of the water and create the reflection continuously change but are immediately replaced by other rays. Because of this, the reflection of the sun in the water appears to be stationary. Similarly, if we stand on the banks of a river and look at the water flowing we hardly notice that the water we are looking at is changing every moment. The speed with which the change takes place gives the impression of an unbroken stream of water. In much the same way, all the substances and supraphysical energies in the body change as soon as the knot is unravelled. Since other substances and supraphysical energies take their place, however, we often observe what we think is an unchanging body. The individuals tied together change; the knot is unravelled but the bond is

not disbanded. When this knot is untied, it is called kala gati. When the bond is not unravelled but the substances change, it is called nitya gati.

Nitya gati is of two types: *bhoota gati* and *deva gati*. Every individual is a combination of atma and the body. Atma is made of the five devas (supraphysical energies), and the body is composed of the five bhootas (gross elements). The process of nitya gati operates in both of them. A sentient being stays alive for as long as the integral relationship between atma and the body remains intimate and undisturbed. When the five gross elements separate from the five supraphysical energies of atma on the death of an individual, they fly out into the airstream and become merged with the five bhootas of prithwi. The five devas or devatas (supraphysical energies) of atma separate from the material components and merge with the five devatas in akasha (space). This separation of the components of the body and their amalgamation into the five basic gross elements is nitya gati, and it is the ultimate outcome or, one could say, the 'destiny' of the material components at the end of the journey. The technical term for this is *atimukti* — total emancipation.

The combination of the gross elements and supraphysical energies changes the physical composition of matter, and also alters the physical forms of supraphysical energies. The five supraphysical energies of agni, wayu, soorya, dik and chandra acquire the forms of wak (speech), prana (breath), chakshu (eyes), shrotra (ears) and mana (mind) in their physical embodiment. The integration of these organs with their physical form disintegrates when they separate from the supraphysical energies. The transformation of the senses into the supraphysical energies is what is called 'total death', and its technical term is *atimrityu*. In essence this is the liberation of the supraphysical energies from bondage to the gross material elements.

Just as there are two kinds of nitya gati, there are also two types of kala gati, known as bhoota gati and *prana gati*. Bhoota gati is the proximate condition to the state of death, and the Sanskrit word for this is *dehanta*, literally meaning 'end of the body'. As noted earlier, a body is made of five gross elements and atma is made of five pranas; these two are linked to each other by sutratma. Their relationship is snapped when this thread of sutratma weakens, and the five material components of the body merge into their respective sources. The process of one 'body' becoming five components is described as *panchatva*. When this happens, the awareness and intelligence associated with the earlier body cease to exist, and this is described as death, or bhoota gati.

Prana gati relates to the disposal of supraphysical energies consequent upon death. Just as the material components of the body are separated from atma at death, similarly the five supraphysical energies or pranas associated with the living body are separated from the body upon its death. However, this process differs in as much as the supraphysical energies do not disintegrate in a fivefold fashion to merge with their source. Therefore, the atma which comprises the five supraphysical energies remains unfragmented, wandering here and there in accordance with the actions of the person during her or his lifetime.

At the death of the individual the knot forged among supraphysical energies in bhootatma as a result of desires, actions, ignorance and so forth is not unravelled, because the forces of avidya (ignorance) which cause this bond are not yet eliminated. So the atma of the five supraphysical energies remains 'tied' and continues to travel in accordance with karma gati (its previous actions).

As mentioned earlier in this chapter, bhootatma leaves the body and travels to deva loka or pitri loka in an upward

transmigration, in a 'vehicle' called *deva yana* or *pitri yana*. The journey to deva loka takes place through one of two pathways: the Brahma path or the deva path. The former leads to emancipation, while the latter leads to the supraphysical domain (also called swarga or the 'supraphysical heaven'). Pitri loka also has two branches: *pitri patha* and *narak patha*, the first of which leads to the swarga of the ancestors and the second to *narak*. This term 'narak' is fundamentally different from the Christian concept of hell, although it is translated as such. Etymologically, 'narak' means "that which causes pain, anguish or sorrow."[221]

The terms 'upward' and 'downward' transmigration may give rise to a picture of physical movement, in either direction. But it should be understood that the seer-scientists use these terms in the sense of desirable or undesirable. For example, when we say that someone has moved 'higher' in her or his life or profession, it does not usually mean that (s)he has physically 'moved' to a higher location, but connotes progress or movement in the desirable direction towards greater happiness.

Vidya (knowledge) and avidya (ignorance) are two parts of atma. The concept of vidya demands a detailed exposition, which we must pause to consider separately. The *Upanishads* have stated that vidya is of two types, higher and lower. The former gives us a deeper understanding of our world, while the latter is knowledge acquired in the course of learning various skills and in gathering information about problems and phenomena in this world. To put it another way, knowledge of the cosmos and its affairs falls in the lower category, while knowledge of the source of the cosmos and the experience of it is higher. We can envisage these terms through the formulation that human cognition is a mixed product of flawless and defective awareness. Vidya is akin to

faultless awareness, and avidya is the opposite. These two are inherent in atma. Vidya gives rise to a perception of underlying unity, whereas avdiya causes a perception of division and divided entities.

Ignorance is limited and confined. Under its influence, and owing to an association with it, knowledge also acquires those traits. In other words, ignorance veils knowledge. When this veil inflates, knowledge is 'splintered' and ignorance increases until it prevails over knowledge. Such a state (of atma) is called jeeva or jeevatma, and is characterised by a prevailing desire for enjoyment over the desire for creativity. Since jeeva suffers from a sense of incompleteness, it has a strong impulse to acquire objects from outside, which is reflected in the desire for enjoyment. In contrast, the Ishwara or Parmeshwara state of atma[222] has a feeling of completeness, causing the impulse to spread out its energies for creative endeavours.

Since both vidya and avidya are indestructible, knowledge and ignorance are enduring traits. They have two kinds of relationship. In a co-operative relationship, ignorance takes the form of desires, actions, afflictions and so on. Although these are mingled with knowledge, they are unable to decisively affect or overwhelm that knowledge. In the second relationship, when the degree of ignorance increases beyond a certain measure, its traits of desires, actions and afflictions take the form of 'seeds' which set in motion the process of attachment to atma as a manifestation of knowledge. Layers of ignorance begin to coat the knowledge (this is called the relationship of 'varnishing knowledge with layers of ignorance'), and cause a loss of knowledge in atma. In a state such as this, the pursuit and practice of vidya and vijnana can begin to 'rescue' the situation, through a process of growth of the knowledge component. If this is pursued knowledge is able to prevail over ignorance in time, destroying the 'seeds'

and bringing about the state of liberation. Ignorance is not completely annihilated but its seed-form is destroyed, as the smritis explain through a picturesque metaphor.[223]

This brief digression into a discussion of knowledge and ignorance has been necessary in order to satisfy enquiries into why atma has to undertake the journeys we have referred to earlier. Does atma move of its own volition, or are its journeys and their outcomes caused and controlled by another factor? If atma were acting of its own volition, the upward and downward journeys would not take place. If it were to undertake a downward journey, propelled by another factor, it is reasonable to assume that it could also take an upward journey for the same reason. The journey is not spontaneous, in other words, but occurs through the inspiration of another factor. That this tendency to travel is not inherent in atma is indicated by the fact that sutratma and chidatma (two of the five types of atma we have discussed) are not subject to these journeys.

At this juncture, it becomes essential to answer the question: who or what inspires the process which compels bhootatma to travel from one loka to another? To find the answer, we must look closely at vidya and avidya. Mana, prana and wak evolve from the vidya portion of atma, but it is avidya which creates desires from the mana component, actions from the prana component and afflictions from the wak component. Desires spur on actions, and teachers of yoga have identified five afflictions caused by avidya: ignorance, loss of self-esteem, attachment, jealousy and arrogance.[224] Atma continues to travel in various lokas because it is compelled to do so through the desires which arise in the heart of a sentient being. Therefore, desire is perceived as the principal cause of the journeys imposed on atma.

There are four types of action which regulate all the operations of the cosmos:

Actions which are in conformity with knowledge;
Actions which are unconcerned with knowledge;
Actions which are contrary to knowledge; and
Purposeless actions.

The first two are grouped in the category of actions, and the second of reactions.[225] Keeping these classifications in view, Krishna has said that it is extremely difficult to distinguish between actions, non-actions and reactions.[226]

We conclude our discussion of this topic by addressing the question as to whether atma has a 'body' during the phase of the journey from the earth to other lokas. The seer-scientist Kausheetaki has provided us with the answer. He states that bhootatma has three components: the supraphysical energies of vaishwanara, taijas and prajnya. Vaishwanara and taijas stay together while entering, remaining in and exiting from the body. Prajnya maintains the consciousness in the body, and vaishwanara agni (a specific type of supraphysical energy) assembles and integrates the material components. The body in this loka with which atma is associated is not destroyed until atma takes on a new body in another loka. According to *Vishnu Purana*,[227] the five gross elements form a subtle body during the journey from the earth to the moon, and from the moon to the earth. Unlike the physical body on the earth, however, this subtle body does not grow.

Prajnyatma resides in the body in its three states in conjunction with vijnanatma. These three states are the waking state, the dreaming state and the state of deep sleep. This combination ultimately leaves the vehicle of this body and begins the search for another.

A deeper analysis reveals that bhootatma has seven states: waking, dreaming, sleep, delusion, fainting, death and emancipation. In the states of fainting, sleep or emancipation,

atma is like smoke, light, water, air or clouds — in other words, it does not have a well-defined body. It confines itself within a gross body in the states of waking and delusion. Therefore, the measure of the body is the measure of the atma, for it pervades the whole body with the exception of the tips of the hairs and nails only. In the states of dreaming and death atma has a 'body' measuring the size of a thumb. Yet despite this it expands to fill the entire body. When its ties with the body are severed, it shrinks back into its original form and size, according to the dialogue in the narrative of Savitri and Satyavan.[228]

When bhootatma leaves the body, it carries with it the supraphysical energies which sustain the five sense organs. Only mana (the mind) retains the awareness of the imprints of those senses, because the senses are not distinct in the external environment (that is, outside the body).

This has of necessity been a very brief discussion of the nature of various atmas and their journeys and outcomes. In the ultimate analysis, as Bhagwan Krishna has underlined in *Shrimad Bhagwad Geeta*, the mind is the principal cause which determines whether atma will remain in bondage or will be liberated.[229]

SECTION FOUR

Yadetan mandalam tapati tan mahaduktham
Ta richah sa richam lokah
Atha yadetad archi deepyate tan mahavratam
Tani samani sa samnam lokah
Atha esha etasmin mandale purushah so agni
Tani yajunshi, sa yajusham lokah
Saisha trayu vidya tapateeti

SHATPATHA BRAHMANA 10:5:2:1-2

Look at that spherical ball that is ablaze. That is the great uktha (centre of the cosmos). That is rik. That is the domain of rik. Look at the radiating lustre. That is sama. That is the domain of sama. Contained in the ball is an individual: agni. This substance contained within the spherical ball is yaju. This is the domain of yaju. Thus all the three vedas are on fire in that ball.

Veda Vijnana

applications and experiments

THE STUDY AND EXPOSITION OF THE *BRAHMANAS* is a gigantic undertaking. So it should perhaps not surprise us that their true meaning has defied Western scholarship. As a result, these 'scholars' and 'experts' have labelled their inner formulations as 'rituals' and their mantras as 'secret formulae'. To provide the genuine seeker with a glimpse of the profundity of meaning contained in these *Brahmanas*, we give here the literal meaning as well as the scientific elaboration of the first *Brahmana* of Book Three, Chapter Five of the *Shatpatha Brahmana*.

This *Brahmana* deals with the making of the altar on which a yajnya is performed. This slightly raised platform upon which a pit is formed, a fire lit and offerings made as oblation is known as *vedi*. All the yajnyas performed by human beings are based upon the pattern of yajnya occurring in the natural world or cosmic domain. The purpose of arranging a yajnya is totally nullified if the same patterns and principles are not followed.

There are various categories of yajnya. *Darshapoornamas* is *haviryajnya*, in which a mass of ground rice rounded into a kind of cake, usually divided into pieces and placed on receptacles, is offered as an oblation in fire. Soma yajnya is called *maha yajnya*, meaning a 'great yajnya' in which soma is offered in oblation. A team of four highly-trained scholars

are the principal people involved in a yajnya, and are called *hotra*, *udgatra*, *adhvaryu* and *yajaman*. This last is the leader of the team, the chief of the entire operation. Hotra recites the *Rik Veda*, udgatra is the specialist and reciter of the *Sama Veda*, adhvaryu is a scholar and practitioner of *Yajur Veda*, and the yajaman is the person who decides to organise the yajnya. Such a person could either be an ordinary householder or nobility.

In the context of the *Vedas*, Western scholars have defined yajnya as 'sacrifice', a ritual in which oblations are offered in fire. Their lack of understanding of the technical terms has led them to make grotesque interpretations and to superimpose their arbitrary constructions on those terms. Every contemporary, sincere attempt at understanding the veda vijnana (the Vedic 'sciences') has to confront the problems resulting from this at every stage and in the interpretation of every mantra. We shall be explaining some of these terms as they occur in the course of various expositions in this work, but shall refrain from indicating in each instance how their meaning has been misunderstood and distorted.

In this chapter we describe some aspects of preparing the vedi, or altar, which is made for the performance of yajnya. This description will be accompanied by a short elucidation of the principles of veda vijnana which govern this process, in order to highlight the parallels between the process of yajnya in the cosmic domain and that performed by a person in our world. The first section gives the broad literal meaning of the mantras[230] which describe the making of a vedi; the related mantra number is indicated in parentheses. Thereafter, we shall explain aspects of the principles of veda vijnana concerned with this process of making a vedi:

MAKING A VEDI

At the outset of a yajnya, a huge covered space is created for making the vedi. Generally this is formed by a thatched roof, and within that covered space a room is built near the place where fire is to be ignited. Traditionally, every household transmitted a householder's fire from generation to generation. This is known as *garhpatya agni*, or 'the fire of the head of the household', and a special space is built to accommodate it. A large bamboo is planted within the covered space and two big posts are erected near the bamboo, with several smaller posts being established at different, specified locations. The biggest posts are in the eastern and western parts of the covered space, and are known as the 'king of posts' by virtue of their size.

The adhvaryu measures the ground, makes the vedi (altar), prepares the vessels to be used in yajnya, fetches wood and water and ignites the fire. From the large post located on the eastern side, the adhvaryu paces a distance of three *prakrams* towards the east. Generally, a prakram is equal to two steps, each of which measures the equivalent of 12 fingers. One prakram, therefore, measures 24 fingers. The adhvaryu covers three prakrams on the eastern side of the old bamboo and to the rear of one of the posts. After covering this distance, (s)he plants a *shanku* (peg), or we may also call it a post. This area, measuring 72 fingers, is the innermost region of the vedi. (1)

Veda is set up on vedi, which is considered to be the 'wife' of veda and thus its shape is feminine. The adhvaryu covers 15 prakrams to the south of the peg planted in the middle and pins another peg there. This is the southern breast of vedi. (2) In the same manner, (s)he covers 15 prakrams northwards from the nail planted in the middle and fixes another nail. This

is the northern breast of vedi. (3) (S)he then covers 36 prakrams or 72 steps towards the east and fixes a peg there. This is the eastern half of vedi. (4) Thereafter, (s)he covers 12 prakrams southwards and fixes a nail. This is the southern shoulder of vedi. (5) (S)he then covers 12 prakrams northwards and fixes a peg. This is the northern shoulder of vedi. Together these form the total measurement of vedi. (6)

The back of the vedi is 15 prakrams south and 15 prakrams north of the middle peg, totalling 30 prakrams. This is so because the virat chhanda (metre) comprises 30 syllables. Devatas are acknowledged in this world by virat chhanda, and the yajaman, performer of the yajnya, is similarly recognised. (7) According to a shruti (a mantra from the *Brahmana* texts), virat chhanda is described as having one *charana* (section) of 10 syllables.[231] However, in this *kandika* (verse), virat has been described as having 33 syllables. A shruti in *Aitereya Brahmana*[232] asserts that one letter more or less does not disrupt the metre, and therefore these syllables can also maintain virat metre. (8)

The region 24 degrees north and 24 degrees south of the equator is called *kranti vritta*, the circle of the sun's course. The earth rotates around the sun, situated on *brihati chhanda*, which comprises 36 syllables. Every *akshar* (letter) in this chhanda cumulatively represents 10 syllables, and thus the earth completes its rotation around the sun in 360 days. The surplus solar supraphysical energy, which flows to the earth and is absorbed therein, returns and is absorbed into the sun also within 360 days. This process of the journey of the supraphysical energies of the earth to the sun and their absorption in the solar system is known as 'gaining swarga'. The term 'swarga' is translated in English as 'heaven'; but swarga is not heaven in the Christian sense of the term. Rather, it is a description of the natural (cosmic) process of radiation and absorption of supraphysical energies.

Following the pattern of the yajnya occurring in the natural world, yajnya performed by human beings has a vedi of 36 *vikrams*, one vikram being equal to two prakrams. Householders of the past, who were performers of yajnya, used to keep a fire perpetually burning in their homes. *Ahavaneeya* means a portion of fire taken from this perpetual fire and prepared for the performance of yajnya; this portion of the perpetual fire is used to prepare the fire in which oblations are made. Since the sun is invoked by the supraphysical energies, the fire taken from the householder's perpetual fire is placed in the middle of the northern part of vedi, near the 36th prakram. For the purpose of establishing a link between the yajaman's atma and swarga, the eastern part of vedi is made measuring 36 prakrams. (9)

The northern and southern shoulders of vedi are located at a distance of 12 prakrams from the central peg, making this region 24 prakrams wide. There is a parallel in this yajnya and that operating in the cosmic natural order. In the cosmic matrix, a universe comprises five entities.[233] These are swayambhoo, parmeshthi, the sun, moon and earth.[234] The supraphysical energy emanating from the centre of prithwi (the earth), which is called *samvatsar agni*, extends up to 36 aharganas, the distance measured by a specified number of days. Beyond that point, the soma, a supraphysical energy from the parmeshthi region, is offered in oblation. Samvatsar agni is yajnya. The beginning of the yajnya is marked by gayatri chhanda, which has 24 syllables. Agni from the earth is called gayatri and is united with the moon, which is another manifestation of the soma of parmeshthi. This samvatsar agni lasts for 12 months, in association with the moon. As it waxes and wanes, every month is divided into a 'bright fortnight' and a 'dark fortnight'. Samvatsar agni is divided into 24 parts, and thus gayatri — which is another form of agni emanating from

the earth — comes to have 24 syllables. Gayatri chhanda is the beginning of the yajnya manifested as the agni of the earth, and therefore the eastern portion of vedi measures 24 prakrams. (10)

The western half of vedi is larger and heavier than the eastern portion, because the western half represents the buttocks of the woman symbolised in vedi. It is also carved in a heavier form because it is endowed with the power of procreation. (11) The northern vedi is the nose. Since the nose is elevated on a face as compared to the eyes, ears and mouth, the northern portion of vedi is made slightly higher in the soma yajnya. As it is higher, it is called *uttara* (northern) vedi. Its location is to the east of the *mahavedi* — where ahavaneeya is offered in oblation to the devatas (supraphysical energies). The northern vedi is raised by adding some earth to this portion. (12)

There were two types of individuals in the rodasi[235] triple world — aditya and angira — before the emergence of all visible creations. Of these, angiras were the first to make the yajnya ready and they asked agni to tell the adityas about the following day's ceremony of the fermentation of soma juice. They told agni: "You should tell the adityas about tomorrow's yajnya. They should ask us to perform the yajnya, and you should also make us perform the yajnya." (13) The adityas wondered how to avoid having the yajnya performed by the angiras. (14) After some thought, the adityas came to the conclusion that the only way around the problem would be to perform *sadyaskra yaga*, which is performed by soma brought on the same day. Accordingly, after preparing soma before the yajnya, they told agni: "You have asked us to participate in tomorrow's yajnya organised by the angiras. However, we are organising the yajnya today with the freshly-brought soma (sadyaskra). Please tell the angiras this. We

request you to be the hotra (the one who pours the articles of oblation into the fire.) (15)

When agni informed the angiras of this and invited them to join the yajnya (*sutya*) being organised by the adityas, the angiras became angry at agni, saying: "Despite being our messenger, you have not honoured our word." (16) In response, agni replied: "The venerable adityas belong to the domain of the sun and therefore I could not violate their injunctions. In this world, one should not violate the words of venerable people." Ultimately, the angiras made the adityas perform the yajnya.

This account of a dialogue between the adityas and angiras hides a 'scientific' scheme of the seer-scientists. We hope that a brief exposition of the same will give our readers a glimpse of the significance of yajnyas and what exactly they convey.

The solar supraphysical energies in the cosmic fraternity are called adityas, while those which are connected with the earth are known as angiras. In the sun, oblation is made of the soma of parmeshthi, whereas the moon, which is resplendent soma, is associated with the earth. Oblation of this soma is made in the fire of the earth, and angiras gather this soma emanating from the moon. Aditya is the solar supraphysical energy which flows to the earth, strikes it and returns to the sun. The moon rotates around the earth, and the earth and moon rotate around the sun. Prithwi (the earth) is divided into two categories: eternal and durable, and transitory and fragile. The mass of the earth is the fragile, unpreservable part while the supraphysical energies, which belong to the class of agni and radiate up to the 21st ahargana, comprise the enduring and eternal prithwi.

In the same way, angira is divided into two classes. The angira associated with the mass of the earth is perishable, while that associated with prithwi in the form of supraphysical

energies is enduring. The adityas are the first to consume (absorb) the soma emanating from the moon, but not the angira which exudes from the prithwi-linked agni. The soma which is gathered by angiras is, in the first instance, offered in the sun by the prithwi-linked agni. Subsequently, the surplus adityas become the property of the earth, and in that state they are described as angiras. The moon-linked soma then becomes related to the angiras. Activated by angiras, agni has to travel to the adityas or solar supraphysical energies, and in the process also becomes the property of the solar system.

As noted earlier, adityas are the supraphysical energies which flow to the earth, strike it and then return to the sun. Therefore, the earth moving around the sun with the moon (as a manifestation of soma) becomes connected to the adityas. The solar energies which are rendered surplus and then become connected to the earth are angiras. They return to the sun, taking with them some portion of prithwi. Because there is some delay in this process of their returning to the sun, the adityas are able to establish contact with the moon-linked soma before the angiras can do so. This is the interplay of supraphysical energies revealed in the above-mentioned anecdote.

The subsequent mantras of this *Brahmana* continue with the description of the interplay of the supraphysical energies, using the enigmatic language of the seer-scientists which has baffled Western 'scholars'. For example, these mantras speak of the importance of offering a *dakshina* (reward or fee) at the completion of the yajnya. When the angiras refused to accept the fragile wak (earth) as dakshina, then the adityas gave the sun as a reward, which was accepted by the angiras. If the solar supraphysical energies do not join prithwi (a manifestation of *angira agni*), the earthly entities will be destroyed in the course of time. The earth-related agni spent in the 'creation' of

various individuals and entities is compensated for by the inflow of supraphysical energy radiating from the sun. That is why the angiras accepted the sun as dakshina (reward). The illuminating sun is offered as dakshina in the yajnya in the cosmos, and a white horse,[236] a symbol of the radiant sun, is offered as reward or fee in the yajnya performed by human beings. (19) The horse should be wearing a necklace bearing the image of the sun in the centre, with 21 golden rays around it. Because gold is an object of the sun, by decorating the horse with such a necklace the yajaman makes it another form of the sun, located in the sky and full of heat. If a white horse is not available, a white bull should be offered wearing a similar necklace. (20) When the angiras refused to accept wak in dakshina, wak became very angry and the earth-linked angiras deserted the devatas. (21)

All the objects and individuals in the universe are products of prajapati.[237] *Awyaya prajapati* is five-dimensional, consisting of ananda, vijnana, mana, prana and wak. Because of its dimensions of ananda and vijnana, which are manifestations of jnana, awyaya prajapati is a factor of emancipation; and because of its dimensions of wak and prana, related to karma (action), it is a factor of creation. Emancipation is freedom from the cycle of creation and dissolution. Mana has a dual role: it is both a factor of emancipation as well as of creation. In its role as a factor of emancipation, prajapati is amrita (eternal and enduring). As a factor of creation, it is martya (transitory and fragile). In the prajapati which is a composite of mana, prana and wak, mana is the fount of desire, prana spurs efforts, and an interplay of the two — desire and effort — leads wak to transform itself into all created entities. Thus wak becomes the material cause of creation.

Wak is also of two types, enduring and transitory, and it is known as akasha (space). In its enduring state it is called

Indra and in its transitory state it is termed the 'wife' of Indra. The supraphysical energies spring from the enduring akasha, while material entities are born from the transitory wak. Mass is formed of matter, and the mass of the earth is made of the transitory part of akasha. Supraphysical energies called angiras spread out from the mass of the earth. These energies are another kind of agni prana which is formless. As the earth advances in its rotation around the sun, angira pranas radiate from it and become waste products. In other words, angira prana distances and separates itself from the earth. New earth-related supraphysical energies, in the form of brand new angira pranas, are generated. This is described as *wak agni* becoming angry at the angiras and deserting them.

The fragile earth, rotating around the sun, is dark in colour. But these dark supraphysical energies are destroyed when the rays of light emanating from the sun fall on the portion of the earth facing the sun. The bright solar supraphysical energies come to the earth and then return to the sun. The solar supraphysical energy which joins the earth is called *ashwa*, translated as 'horse'. The solar supraphysical energies associated with the dark side are called asuras. The mass of earth lies between these two classes of supraphysical energy, and it consumes both like a violent tigress which consumes all kinds of animal. Both devatas and asuras want to establish their supremacy on the earth. The supraphysical energies emanating from the front of the sun, permeated with agni, are bright and dazzling. In contrast, the supraphysical energies emanating from the back of the sun, although permeated with agni, are dark. The former become the messenger of the devatas and the latter that of the asuras.[238] (21)

Although both devatas and asuras tried to lure the earth to their side, the sun took the side of the devatas because the pull of solar supraphysical energies is greater than the pull of

the asuras. While moving towards the devatas, prithwi asked: "What will I gain by coming to you?" The devatas replied that the first *ahuti* (offering) of agni would be made to it. This is why the solar supraphysical energies first established contact with the earth. As a result, wak (agni) was pleased with the devatas and came to them. (22)

An offering is made in the ahavaneeya pit in the northern vedi, immediately upon the placement of the fire. This is in accordance with the assurance given — in the context of the cosmic yajnya — that the first offering would be made to prithwi. After this some soil is added and vedi is raised. Wak is another form of yajnya, and to raise uttar vedi higher is to raise the yajnya. (23)

VEDIC EXPERIMENTS

Having described briefly the making of vedi, let us look into what this process signifies as an illustration of the fact that these activities are not blind, irrational or superstitious rituals. Yajnya, as noted elsewhere, is the interaction of supraphysical energies which takes place continuously in the cosmic domain and leads to the creation of all the individuals which comprise our universe. At a basic level, yajnya is the interaction of the two fundamental supraphysical energies of soma and agni. At the material level, agni manifests itself as fire in the yajnya performed by a human being, and soma manifests as the materials offered as 'oblation' in the fire.

The yajnya we human beings perform replicates the yajnya in operation in the cosmic domain. The yajnya performed by humans is often aimed at achieving certain goals and the fulfilment of certain objectives. The 'modern' mind dismisses this process as 'superstition' and therefore treats yajnya as a mere ritual. Proof is often demanded that yajnya actually leads

to the results for which it is performed. This scepticism draws support from the fact that the detailed and exact procedure of performing a yajnya is not known to many specialists today.

More serious problems arise from the non-availability of several material inputs required for these yajnyas. However, those with an open mind should look at two important aspects. Firstly, yajnya is an important application of the scientific principles enunciated by the seer-scientists and forms an extremely significant component of the literature of the *Vedas*. Secondly, several applications flowing from the same sources and based on the same theoretical principles are not only in vogue but are becoming popular even in the West. These include yoga — which includes several effective and proven methods to harness and augment the untapped potential of the human body, mind and intellect — and ayurveda, the science of health care and longevity. Ayurveda is serving millions of people not only in the land of its origin and development, but it is also offering solutions to several grave medical problems throughout the world. An increasing number of people in the West are turning to ayurveda, despite the fact that the values of modern science have a powerful hold over people's minds.

Over the ages, the theories and principles enunciated in the *Vedas* have come to be abundantly reflected in other areas such as astronomy, architecture, town planning, metallurgy, meteorology, geology, linguistics, alchemy and hydrology. If the principles enunciated in the *Vedas* are found practical and empirically demonstrable in such sciences and activities, it is reasonable to suggest the possibility of their application in hitherto unexplored areas. By denying these possibilities we deprive human beings of a very powerful tool of augmenting knowledge, discovering truth and exploring new avenues of solutions to problems afflicting them at personal and social levels. It is advisable, in the first instance, to have a grasp of

the theoretical basis of these applications and to follow this up with earnest research.

Cultures and systems of knowledge are endowed with specific technologies and methodologies. Those who insist on testing a thought-system by using the technology and tools of another system reflect unscientific minds beset by prejudice and arrogance. Such cases often revolve around powerful vested interests, whether these be commercial, political or theological, which would like to destroy a thought-system seen as potentially inimical to their own concerns. It is our hope that increased awareness of the principles enunciated by the seer-scientists, combined with an intensification of the human impulse for advancement of knowledge will gather adequate strength to stand up to such vested interests.

Now let us return to the first step in the performance of yajnya, namely the making of a vedi. All individuals and entities in the cosmos are a manifestation of the vedas of rik, yaju and sama, which 'produce' every individual in much the same way as all matter, in the ultimate analysis, is the manifestation of energy. The base on which these three vedas operate is vedi. Therefore, vedi has been visualised as the 'wife' of the vedas. Every object that we gain is veda in the specific form of that object. The term 'gain' in this context signifies 'to know', 'to experience' or 'to acquire'. There is no object or entity bereft of the vedas which make it.

The sun is a composite manifestation of the three vedas, so that we could describe it as a 'consolidated' form of them. The ball that we see in the sky is the originating location of the rays emitting from the sun, and is known as *mahaduktha*. As noted elsewhere, uktha is the centre or heart of a sphere. Mahaduktha means the 'great uktha', the primary centre. This ball is rik, from which rays radiate in all directions in the solar system, comprising the sphere of sama. The technical term

in the *Vedas* for this sama sphere is *mahavrata*. Prajapati is located at the centre of the ball, and is composed of mana, prana and wak. It is yaju, and has two components, one of which is stationary and the other is moving. Yat is the stationary, motionless component, and ju is the moving factor. This mobile component of prajapati located at the centre of the ball is also known as purusha. Yat is also described as wayu (the wind), while ju represents akasha (space).

Wayu is a crucial factor in the creation and growth of the universe, playing an important role in such an obvious phenomenon as rain. Without the wind there will be no rain, and without the rains there will be no 'output' from the earth. There will be no food, no nutrition, no strength, no reproductive matter (such as sperm), so that ultimately the entire process of creation will stop. Sperm is a 'drop' when planted in a female duct system, the reproductive organ. The air within the body plays a crucial role in the transformation and growth of the foetus, and ultimately of the various limbs of a human body. (Wayu is linked with agni and, therefore, this term 'agni' is employed to indicate it.) Rik and sama are neuter and have no creative or reproductive capacity. Creation takes place from yaju. The entire rodasi triple world springs from yaju, from agni-linked prajapati. In other words, it springs from a critical component of the sun, which is a composite manifestation of the three vedas.

Mantras in *Rik Veda* highlight the proposition that all individuals evolve from the sun[239] and describe the sun as the atma of the cosmic arrangements.[240] The theoretical concept that the sun is the composite and consolidated manifestation of the three vedas is explained succinctly.[241] The veda called *gayatri matrika veda* is based on the sun, which is the vedi or altar on which it operates. As mentioned earlier, vedi is the foundation and support of veda. This solar form of gayatri

matrika veda flows to the earth and becomes its property. In this state it is given the name yajnya — *matrika veda*. Prithwi (the earth) performs yajnya. Since this yajnya is the facilitation of this veda — for without veda, yajnya cannot be performed — it is called *yajnya mantrika veda*, and prithwi is its base. The yajnya operates on prithwi and the three vedas are based upon it. Agni is called 'yajnya' because yajnya is the oblation of soma in agni. Agni is transformed into the three states of solid, liquefied and gaseous, known as agni, wayu and aditya respectively. Agni is the support of rik — in fact, we could say that agni *is* rik. That which we observe in the universe is agni in various forms, for agni lends *moorti* (form) to an individual, causing its shape and appearance.[242]

Since all forms are made of agni and agni is rik, the seer-scientists use the expression *rik roopa*, or 'the form that is rik'. Around this form is a sphere of luminosity called soma. The circle of luminosity gradually becomes smaller as one moves away from the centre of the mass, which has a form. This explains why an object looks smaller as we move away from it. The furthest point beyond which the object does not remain visible is the outermost circle of soma's radiance. From that location to the centre of the mass is the area of sama circles. When we see an object we see rik. If we draw a circle from that location — with the centre of the mass as the centre of the circle — we will have a sama circle. There are 1000 sama circles, each smaller than the other.[243] All those standing on a specific sama circle and looking at an object will find it of the same size.

The 'substance' between rik and sama is yaju, and all individuals — objects and entities — in the universe are composites of these three vedas. When an individual comes into being, it has a form. This is the beginning of creation. Within that form is located the substance of which that

individual is made. This is the middle phase of creation. The individual becomes visible and with that the process of creation of that individual ends. Agni is at the beginning, wayu in the middle and aditya is at the end. Rik evolves from agni, yaju is produced from wayu, and sama springs from aditya.[244]

Veda is the base, the substratum. When the sun's rays reflect on an object and travel to our eyes, they acquire the shape of that object and enable us to 'gain' it and to see it. If there were no prithwi (earth), there would be no veda, for gayatri matrika veda is based on the earth.[245] One important point needs to be explained at this juncture. The earth is a generic illustration of prithwi as vedi. In fact, every object and entity in the cosmos is vedi, including books, pens, houses, linen, men, women, animals, birds and so on. The three vedas or supraphysical entities are based on these vedis. If there were no vedas, it would not be possible to 'gain' these objects. Prithwi is that on which veda is based, and therefore the generic term 'prithwi' denotes all individuals upon which the three vedas are established. We, as individuals, are the support of our three vedas. If we were not there, the three vedas linked to us would not be there also. For these vedas, we are the vedi. Yajnya is performed from veda, so that veda *is* yajnya in a subtle sense. The yajaman seeks to replicate this yajnya operating in nature. The vedi is made in order to support these vedas. In the *Brahmana* verse we are studying in this chapter, the methodology of making vedi is explained, and thus it is known as "The *Brahmana* of Making Vedi".[246]

As explained earlier, the yajnyas performed by men and women in this world replicate the yajnya occurring in the cosmic order, and so the vedi and the appliances and materials used for yajnya follow exactly the process and materials of the yajnya in the cosmic order. (Yajnyas are of five types, but we have neither time nor space here to describe them in detail.)

If the yajnya we perform does not conform exactly to the operations in the cosmic order, it becomes futile, a point which has been emphasised repeatedly by the seer-scientists.[247] This makes it necessary to explain the meaning, mystery and significance of the yajnya operating in nature. Unless we understand how these yajnyas operate in the cosmic domain, we cannot comprehend the performance of yajnya here in this world by human performers. The operation of the cosmic yajnya is a subject of arduous study, but for our purposes it may suffice to give a broad outline of some features of the cosmic yajnya.

All 'individuals' in the cosmos are manifestations of yajnya. The term 'individual' denotes every object and entity which has a distinct identity of its own. A yajnya of the inflow and outflow of supraphysical energies occurs continuously in each of these individuals. Let us take the example of the yajnya linked with prithwi, the earth. The earth is a mass and it rotates around the sun on its own axis in 360 days. The movement of the earth on its axis is completed in 24 hours, and day and night are produced from this rotation. The supraphysical energy of agni linked to the earth is called garhpatya, and that linked to the sun is ahavaneeya. Prithwi is 'black' in its original form and, therefore, the agni linked to it is also black. In contrast, the solar supraphysical energy is 'white', as is ahaveneeya. There is a dominance of solar supraphysical energy during the day, whereas garhpatya dominates at night. The solar supraphysical energy which travels to the earth during the day is described as the ahavaneeya and agni of the earth. The supraphysical energy which radiates in the night is called garhpatya because it is the original form of prithwi, the supraphysical energy which operates on the surface of the earth. The solar supraphysical energy operating on the surface of the earth is ahavaneeya.

The earth, interspace and sun comprise the 'three worlds', and their supporting supraphysical factors are agni, wayu and aditya, all of which are various forms of agni. A supporting factor is known as *nara*, and a new version of agni, formed by the combination of the three, is called vaishwanara — because it is produced by the naras (supporting factors) of vishwa (the cosmos). Vaishwanar agni located on the earth is the *dakshina agni* (south agni) of the yajnya here. In this, the material objects to be used are baked.

The moon, which rotates around the earth, is the physical form of chandrama and is permeated with soma. The moon is the mass of dazzling soma; it is poured in oblation in the earth-linked agni which has been operating earlier as garhpatya. The agni related to supraphysical energies has been given the name 'devata',[248] and this is the *darshapoornamas yajnya* of prithwi.

The moon completes its rotation around the earth in one month, divided into one bright and one dark fortnight. The oblation of soma on the full moon day of the bright fortnight is called *poorna maseshti*, while on *amavasya*, the totally black night, it is called *darsha*. Then the darshapoornamas yajnya of the earth is accomplished.

In the natural/cosmic haviryajnya, the day-linked supraphysical energy related to the surface of the earth is ahavaneeya and that related to the night is garhpatya; vaishwanara is dakshina agni; the earth is the vedi and the soma from the moon is the offering. Darsha and *poorna* are the two principal days of this yajnya, and the yajnya performed by men and women in our world follows the same pattern.

The ahavaneeya solar supraphysical energy is located on the eastern surface of the earth in the cosmic haviryajnya. In the yajnya in this world, ahavaneeya is made in the eastern portion, while garhpatya is made in the back or western

portion. This emulates the pattern found in the cosmic order. In the scheme of nature or the cosmic arrangement, vaishwanara is located in the southern portion so here, likewise, dakshina agni is located in the southern portion. The vedi — resembling the earth — is built on the pattern of the cosmic arrangement between ahavaneeya and garhpatya. This haviryajnya (named *darshapoorna maseshti*) is performed — following the arrangements of nature — on amavasya (a dark, moonless night) or *poornima* (a full moon night). Prithwi also performs soma yajnya in the same manner as it performs darshapoornamas.

As noted earlier, the earth and moon rotate around the sun in a process pithily described by shruti.[249] The earth is also known as *poosha*[250] while soma is another name for the moon. Poosha and soma ride a chariot of supraphysical energies and are observers of all the individuals of this universe as they traverse the entire cosmos. The ahavaneeya agni of the *havirvedi* of the earth becomes the garhpatya of the great vedi of soma yajnya. Agni spreads out in measured stacks located at various levels, each of which is called an ahargana. Ahavaneeya agni is the 19th stack of the agni of prithwi — this agni permeates 17 levels. The oblation soma located above the 21st ahargana is offered in this and is known as soma yajnya. (*Jyotishtom* is another term for the same yajnya.) The universe originates in this yajnya, and this cosmic process is replicated in the soma yajnya performed by human beings on the earth.

By now the reader is conversant with the triple world comprising prithwi (the earth), antariksha (interspace) and dyau (the sun). Dyau is akin to the sun or the solar system, below which interspace exists. Eight agnis or supraphysical energies, emanating from the different *nakshatras* (planets/ stars), are located in this region. These are known individually as *dhishnya* and collectively are covered by the term 'agni'. This

is on the 15th ahargana of the earth. Ahavaneeya agni is located on the 17th ahargana, and it is here that the oblation of soma takes place, forming *agni soma yajnya*.

Since the yajnya here follows the pattern of the yajnya there at every stage, an in-depth study of the yajnya here results in a comprehensive study of the process of yajnya in the cosmos. In the cosmic soma yajnya, ahavaneeya is located on the 17th ahargana. Here also, ahavaneeya is made on the 17th location in the yajnya. And just as eight *dhishnyagin*s exist in interspace, following the same pattern eight *dishya agni*s are ignited here. Mahavedi here also follows the mahavedi in the cosmic order. There is a layer of air around this earth, known as *aemoosh varah*, beyond which the mahavedi in the cosmic order begins. Therefore, here also construction of uttar vedi is carried out at a distance of three vikrams from garhpatya agni, which represents the earth in the cosmic domain.

This is not the proper place to explain in detail the cosmic yajnya and how it is replicated in the yajnya in this world, since this is a subject of separate, specialised and detailed study. However, a few examples will illustrate the parallels between the two and should suffice to make out the case for a deeper study of the application and experimentation which follow the theories enunciated in the Vedic sciences. We have mentioned virat chhanda already, this being the metre which regulates the interplay of cosmic supraphysical energies. In its literary application, virat chhanda consists of 30 syllables,[251] and the supraphysical energies in the cosmic domain are regulated in accordance with the same principles. Accordingly, in worldly yajnya the yajaman is established at a distance of 30 vikrams.[252] Virat chhanda is of four types, each of which has 10 syllables. These four are described as one-legged, two-legged, three-legged and four-legged respectively. Taken as a whole, they are known as *parama virat* ('having 40 syllables'). Ten syllables give

virat form, whatever the number involved may be, so that a virat is formed as soon as 10 supraphysical energies are combined.

According to several shrutis, the entire discernible and visible universe is a manifestation of atma.[253] As we have noted elsewhere, atma is a composite of mana, prana, wak, vijnana and ananda. The mana-prana-wak portion is the regenerative segment from which all karmas ('actions') ensue; and the entire cosmos evolves from this segment. The creative dimension of atma is a cumulative form of mana, prana and wak in combination. The emancipating dimension of atma is a composite manifestation of vijnana and ananda. All these propositions indicate the evolution of the cosmos from atma and brahma, a principle enunciated clearly in *Shatpatha Brahmana* also.[254] Mana, prana and wak are inexorably intertwined, so that we should assume the presence of mana and prana wherever we locate wak. To express it in the language of modern physics, wherever there is matter, the presence of energy should be assumed. This combination is prajapati, and the first prajapati is known as swayambhoo because it is self-generated, coming into being spontaneously on its own. No other individual has given birth to it. Like a spark of light piercing dense darkness, swayambhoo emerges on its own,[255] a hypothesis enunciated by seer-scientist Manu.[256]

All forms of creation emerge from this swayambhoo. These include creations born by the process of intercourse (of the male and female principles), and creations which took place before this class of progenies were born (pranas fall into this second category). These are akin to elements, while the first category of creation is akin to compounds. Pranas are called *akshata*s, 'that which does not diminish'. The prana component of creation is the original and fundamental state

of all creations. Prana is a tattwa bereft of flavour, form, touch and sound. Pranas are also known as rishis, and there are innumerable rishi pranas in the cosmos.[257] Some of these are described as 'celibate', thereby indicating that they do not produce or cause any creation. Pranas such as *narada*, *sanat*, *sanatana* and *parvata* are included in this category. Several other pranas, however, are endowed with creative and regenerative powers, and the seer-scientists of Bharatavarsha have identified 10 of these. In addition, the seer-scientists belonging to the asura group have identified two such pranas. Thus, to date only 12 creative pranas with regenerative powers have been identified as operating in our universe. These are as follows: bhrigu, angira, *atri*, *marich*, *kratu, daksha*, *vashishta*, *agastya*, *pulastya*, pulah, kashyap and *vishwamitra*. Pulastya and pulah belong to the asura clan, while kratu and daksha are related to the 'physical' domain. Here, we use the word 'physical', as explained earlier, to include matter as well as energy. Kashyap and vishwamitra are single, while all the other pranas live in pairs and all five pairs are mutually interwoven and intertwined.

According to traditional practice, a seer-scientist who identified a particular prana and was able to apply it came to be known by the name of that prana. For example, he who identified *kashyap prana*, experimented with it and applied it in real life is known as Kashyap; and he who discovered, experimented with and applied *bhrigu prana* came to be known as Bhrigu. Since only 12 pranas with a regenerative and creative capacity have been identified, we know of only 12 great rishis of Bharatavarsha. Of these, Pulastya and Pulah joined the asura camp, so that followers of the vedas were left with only 10 pranas.[258] Thus it is said that 10 pranas were born from prajapati. In keeping with this tradition, these 10 are cumulatively known as 'virat', which is why virat chhanda

consists of 10 syllables. These 10 pranas — 10 forms of supraphysical energy — are the originating factors of the entire cosmic creations which are compounds of these 'basic individuals' and 'elements'.

Pure pranas are rishis. When pranas interface with each other — five pranas uniting with the other five — another form of supraphysical energy emerges, called pitara. Scholars who are not aware of this process in the supraphysical domain have interpreted the scientific reference to pitar prana as 'rituals relating to ancestors', because they translated the word 'pitara' as 'ancestor'. A similar confusion prevails over the use of term 'devatas' — translated as 'deities' or 'gods' —and 'asura', translated as 'demon' or 'evil spirit'. However, as we have noted earlier, supraphysical energies related to the illuminated portion of the earth and radiating from the sun are devatas, while asuras are supraphysical energies related to that portion of the earth which is on the other side and is therefore submerged in darkness.

There are seven chhandas in the solar system: 1. gayatri; 2. *ushnik*; 3. *anushtup*; 4. *brihati*; 5. *pankti*; 6. *trishtup*; and 7. jagati. The deva pranas are located on these seven chhandas, and the sun is located on the brihati chhanda, from where it exudes light and heat.[259] Devatas travel to the earth from this brihati chhanda and then return to their original location. The region 24^0 north and 24^0 south of the Equator is known as *kranti vritta*, the 'circle of revolution'. Seven circles are located within this space, including the brihati chhanda. The last and smallest circle is gayatri chhanda. When the sun is on that circle, we witness the shortest day and the longest night of the year. For those who live north of the Equator, this is the smallest circle. It consists of 24 syllables, and each 'leg' of the chhanda consists of six syllables. *Ushnik chhanda* is larger, comprising 28 syllables, with every 'leg' consisting of seven syllables.

Anushtup chhanda has 32 syllables, each 'leg' consisting of eight syllables. Brihati has 36 syllables, each 'leg' consisting of nine syllables. Pankti has 10 syllables, trishtup has 11 and jagati has 12. Every chhanda has 360 degrees or as many divisions. There is a continuous movement of supraphysical energies in the cosmic yajnya from prithwi (the earth) to dyau loka (the solar system). Therefore, the yajaman also makes vedi of 36 vikrams. Just as the sun is the ahavaneeya of the devatas, so here, also, in the worldly yajnyas, ahavaneeya is placed in the middle of the uttar vedi situated near the 36th vikram. As the yajaman does so, (s)he aspires to link her or his atma with swarga.[260]

All other activities pertaining to the making of vedi replicate the yajnya occurring in the cosmic order. It would appear, therefore, that the yajnyas in this world are experiments and applications of the cosmic scientific principles. They have also become an invaluable method of preserving that knowledge. All acts of yajnya remind us of the operations of the cosmic domain. The use of materials in yajnya tells us about the significance of supraphysical energies, within which there is an amazing internal consistency. For example, why is barley the preferred grain? Why is a brown animal skin spread out for sitting on? How many supraphysical energies operate in a human being? How does the operation of the supraphysical energies affect vegetation? Even such mundane questions as why a person does not experience pain when the nails or hair are cut yet does experience pain if any other part of the body is cut are asked and answered.

Far larger questions are also posed, such as: why does the earth not fall? How does the force of gravity operate? Explanations ranging from the movement of the stars to the functions of the mind, the behaviour of animals, the roots of

pleasure and pain, the prediction of eclipses (and a whole range of other issues) are handled with the same internal consistency. So to dismiss such a grand coherent scheme of knowledge as 'ritual' and 'superstition' is, to say the least, disappointing in an age which lays claim to reason and logic, and on the part of scholars who claim to be rational.

saha-yajnah prajah srstva
purovaca prajapatih
anena prasavisyadhvam
esa vo stv ista-kama-dhuk

GEETA 3:10

In the days of old, having set in motion the cycle of creation by the process of yajnya, prajapati — the supraphysical energy which is the source of all creation — told the offspring: "Let this process of yajnya continue and lead to the fulfilment of all your desires (to continue the cycle of creation)."

Yajnya: The Creative Process

WESTERN SCHOLARSHIP DEFINES YAJNYA AS "worship, devotion, prayer, praise, offering, sacrifice, oblation".[261] It is also alleged, totally mistakenly, that: "The former meanings prevail in Veda, the latter in post–Vedic literature."[262] For all practical purposes, therefore, the definition of yajnya has been frozen as signifying the ceremony in which the oblation of clarified butter and other materials is offered in fire. The *Ashwamedha Yajnya* is presented as the ceremony of "horse sacrifice", and is described as "the grandest of the Vedic religious rites of ancient India, performed by a king to celebrate his paramountcy."[263]

All this is, at best, a partial understanding. At worst, it is a gross distortion of an extremely subtle act, for yajnya signifies the process of creation. It is the process of the bonding of 'elements' — the basic 'individuals'. Several formulations by the seer-scientists and others of great erudition explain that all the universes, all created individuals who inhabit these universes and, in fact, every entity evolves from yajnya. It is the eternal, natural principle of creation, and knowledge of its functioning in nature enables people to develop the capacity for new creation. This is akin to modern scientists creating new elements in laboratories by nuclear reaction, in addition to the 92 elements which occur naturally on earth.

The process of yajnya generally involves the interaction of two substances, one of which is primary and the other secondary. In the terminology of the seer-scientists, the primary or dominant substance or individual is called *vrisha*, while the secondary individual is called *yosha*. In the interaction of these two substances in the process of yajnya, one individual consumes the other. That which is consumed — yosha — is classified as anna, and that which consumes the other substance — vrisha — is called annada. By fixing the meaning of anna as 'food' or 'grain', Western scholars have completely failed to understand the meaning and significance of the Vedic verses in which these terms have been used to explain a phenomenon in accordance with Vedic sciences. Vrisha and yosha are also indicated as the male and female principles whose union leads to creation. And vrisha and yosha are described in the *Prashna Upanishad* as *rayi* and prana, whose interaction leads to the creation of the cosmos.

Yosha is the tattwa that is consumed. It is anna, the combustible element, and is known as soma. Vrisha is the fire in which it burns and it is therefore known as agni. Western scholars perceive agni as ordinary fire, and soma as a brew which was prepared in ancient times for drinking. They translate the latter as "a juice, extract from [the] Soma plant".[264] Such wrong ideas abound, and this may be one of the reasons why the present age has been deprived of the real meaning of the verses which contain profound explanations about the reality of the cosmos and the process of creation.

The agni that burns is hot, while the soma consumed in that fire is cold. The interaction of heat and cold cause a *ritu* (season) to occur. *Samvatsara* — another profound term in the Vedic lexicon — is the aggregate of the seasons. Samvatsara is *yajnya prajapati*, from whom the triple worlds of earth, interspace and the solar system are born. Several formulations

in the shrutis elucidate the vijnana of yajnya centred on prajapati.[265] The supraphysical energies which regulate the creative process in nature, and the supraphysical energies of this earth which regulate the human world are linked with each other. The supraphysical energies emanating and operating on earth are harnessed by performances of yajnya, which are executed in the same manner as creations take place in the first instance.[266] "'I' (the individuals created on this earth) am ritu (the season). I am a part of ritu. You, the samvatsara, are like atma originating from space (akasha), fluid of the fertility of a woman. What you (samvatsara) are, the same am I (the creation)."[267] This *samvatsar prajapati* is also definitely 16-dimensional (since it is born of the 16-dimensional purusha that witnesses the process of creation).[268] This samvatsara is yajnya prajapati.[269] Samvatsara creates material entities and then rules over them.[270] Purusha is yajnya.[271] Purusha is samvatsara.[272]

As we proceed with the study of some of these formulations of the *Vedas*, we shall see the utter absurdity of translating yajnya as a "sacrificial ceremony" and purusha as a "man" or a "male". It defies comprehension how those Western scholars, while applauding the intellectual and literary attainments of Bharatavarsha, were satisfied by such nonsensical translations. They appear to have been content to imprison these formulations within the confines of their prejudices, perhaps because in their minds it was natural for 'early mankind' to be speaking thus.[273]

This has often led to ridiculous translations and grotesque interpretations. For example, the mantra containing the formulation that 'purusha is yajnya'[274] has been translated as follows: "Now the sacrifice is the man. The sacrifice is the man for the reason that the man spreads (performs) it; and that in being spread it is made of exactly the same extent as

the man: this is the reason why the sacrifice is the man."[275] This mockery of a translation is the result of colossal ignorance about the meaning of the two profound terms of yajnya and purusha, which occupy a critical place in the cosmic matrix as the process of creation and the commencement of the cosmos. We consider them in detail in the chapters "Introducing Purusha and Prakriti", "Seven Purushas and Prajapati" and "Veda Vijnana: Applications and Experiments".

For an introduction to the process of yajnya in the cosmic matrix, readers are advised to refer to the chapter "Yajnya: Meaning and Significance" in *Before the Beginning and After the End*. Here we shall initiate our readers into the various types of yajnya, to help comprehend this significant process which has unfortunately been misunderstood as merely the ritual of pouring clarified butter or other material onto fire.

Let us begin with the process of yajnya which takes place in the human body. We all consume food, from which juices are extracted to energise our body. If we were feeling exhausted before eating, these juices stir up our exhausted energy in the same way as fire receives a new boost when oil or butter is poured onto it. In due course, the consumed food is transformed into energy in our body. This life-giving energy is prana at its primary level, and this prana becomes a stimulant for all our activity. It spurs on our bodily organs to perform their functions. As we engage in activity, the prana is expended, the energy in our body is weakened and the impulse to perform activity declines. Prana thus begins to 'faint'. This state of prana is called *ashanaya*, which literally means 'the desire to consume food'. It gives rise to appetite, which in turn leads to the consumption of food and the conversion of that food into juices. These juices are again transformed into energy, leading to a reinvigoration of the prana. This generates the strength and impulse to perform

various actions until the prana is spent, once again, as energy is spent in the course of performance of these actions. This cycle continues incessantly, and is an illustration of bodily yajnya in the human physical structure.

This concept of bodily yajnya predates the current understanding by several thousand years. However, an understanding of the views held by modern science will help readers to begin the process of comprehending the concept of bodily yajnya, at least at its physical level. (It will require a quantum leap in mental constructs to comprehend the relationship between the physical and the supraphysical levels.) Modern science views the body as a mobile chemical factory which processes raw materials such as food, water and oxygen. After being ingested and imbibed, these raw materials go through a series of complicated reactions known as metabolism. This produces the energy that the body needs to function.[276] Once the food has reached the stomach, it is whirled around with the gastric juices.[277]

Let us now look at the yajnya operating in the cosmos. Until just 400 years ago, 'modern' scientists believed that the earth was the centre of the universe. Polish astronomer Nicholas Copernicus developed the theory that the earth rotates around its own axis daily and around the stationary sun annually. This idea had far-reaching implications for the development of modern science: henceforth, the earth could no longer be considered the centre of the cosmos, but one celestial body among many. The planet orbits the sun in a path which is presently more nearly a circle than are the orbits of most other planets.

The seer-scientists investigated this question several thousand years ago and evolved three levels of postulated theories. The first level was based on visual observation, the second on the actual movement of these bodies, and third

took into account the order in which these individuals come into being and cease to exist. These three levels of postulated theories are categorised as *drishti moola srishti vidya* (the science of creation based on visual observation), *sthiti moola srishti vidya* (the science of creation based on actual movements), and *srishti moola srishti vidya* (the science of creation in accordance with the order in which the cosmos comes into being).

Students of modern science know that the Equator is the great circle of earth, equidistant from the two poles, which marks the division between the northern and southern hemispheres. However, 'equator' is a generic term signifying a circle on any spherical body which divides it into two equal parts. The seer-scientists call this *vishwad vritta*, the circle in the middle of the earth. If the sun were to be placed at the centre and a circle drawn around it, it would make a chhanda, having 360 degrees. If the circle with the sun at its centre is divided into four quarters, each quarter will have 90 degrees. Brihati chhanda is the circle at the centre of this cosmic arrangement, in the centre of which the sun is located.[278]

After the findings of Copernicus, scientists changed their view to one which maintains that the earth rotates around the sun and the sun is stationary. But according to the Vedic sciences, the concepts of motion and stasis are relative. At the visible level, the earth is stationary and the sun moves, a formulation articulated by those who uphold this view.[279] But those seer-scientists who studied this phenomenon further came to the conclusion that the sun neither rises nor sets, but is firmly stationary in the middle.[280] The earth rotates around it on its orbit, called kranti vritta. For the purposes of astronomy, kranti vritta signifies the region that is 24 degrees north and 24 degrees south of the Equator. The moon rotates on its orbit, known as *daksha vritta*, around the earth. A technical term for the moon is soma[281] and for earth is

poosha.[282] Poosha and soma rotate around the sun on their respective orbits, and this rotation causes an inflow of solar 'juices' in the earth and the moon. These juices are in the nature of supraphysical energy and are the source of life of all creations on the earth. It would appear that, by their rotation, they are arranging the 'food' for all individuals that come into being in the universe, a proposition succinctly put forward in *Sama Veda*.[283]

The seer-scientists then delved deeper to find an answer to the question why the earth rotates around the sun. The *Vedas* reply to this query by stating that yajnya invigorates Indra, the supraphysical energy emanating from the sun. "Strengthened by the power of yajnya, the solar Indra — depicted as an ox with sharp horns which are indicative of the sun's rays — strikes the earth and turns it around."[284] The metaphors of yajnya, the horns, Indra and so forth are all used in the Vedic sciences, and their meaning must be understood if we are to fully comprehend the formulations of the seer-scientists.

The discussion of the movement of the earth and the sun does not end here. The third viewpoint on the science of the cosmos bases itself on the order and sequence in which various individuals in the cosmos come into being. According to this viewpoint, the sun is not absolutely stationary but carries the earth and the moon in the sphere of its effulgence; it rotates with them around another cosmic individual known as parmeshthi. All these individuals — the sun, earth and moon — exist like bubbles in the vast ocean of parmeshthi, which rotates around yet another individual called swayambhoo. The study of these five individuals and their interrelationship is a separate branch of the Vedic sciences. This entire array, from the earth to parmeshthi, is incessantly rotating at a furious speed. This rotation gives rise to the

inflow and outflow of supraphysical energies between various individuals in the cosmic matrix, and this is the basis of all creation. This inflow and outflow of supraphysical energy is the yajnya taking place in nature.

The yajnya in nature broadly occurs according to the following contours: as stated earlier, the sun is located on brihati chhanda. Several types of supraphysical energy radiate from the sun and are spent in the creation of different types of individuals, both sentient and insentient. These solar supraphysical energies give rise to all animate and inanimate creations, including birds and animals, trees, rivers, hills and human beings.[285] The inflow of supraphysical energy in the sun and its consumption in the process of creation is the cosmic yajnya.

Although one may assume that the sun possesses such an inexhaustible reservoir of supraphysical energy that it is not fully spent even after being consumed in these innumerable creations, the seer-scientists have examined how long this reservoir lasts and what happens when it is exhausted. According to the Vedic sciences, the sun with which we are familiar is like a bubble in the vast ocean of parmeshthi, and a time comes when it is subsumed in that ocean.

Yajnya has numerous classifications depending on the 'substance' consumed in the process of interaction and interface. There are material, physical and supraphysical yajnyas. And there are yajnyas which are a permutation and combination of these three broad categories.[286] *Shrimad Bhagwad Geeta* underlines yajnya as the critical and fundamental process of creation, when Bhagwan Krishna tells Arjuna that: "Having first created all individuals by yajnya, prajapati said: 'By this shall you propagate, let this be your *kamadhenu* (that which fulfils all your aspirations).'"[287] This is commonly understood as the 'mythical cow of Indra' from

which one can obtain all that one desires, but the technical meaning of the term 'kamadhenu' is different and will be explained in another work by the author.

To sum up, yajnya is the process of fusion, interaction and interface of the supraphysical energies which facilitate creation. Yajnyas performed by human beings are not 'rituals' but experiments based on processes operational in the cosmic domain.

SECTION FIVE

Shradhaval labhate jnanam
tatparah samyetendriyah
Jnanam labhdhwa param shantim
achirenadhi gachhati

GEETA 4:39

Jnana (knowledge) is attained, in the first instance, by one who is equipped with shraddha (faith, devotion and conviction). Then it (knowledge) is attained by those who subdue their senses. Those who gain this knowledge attain and live in enduring peace.

The Quest for True Knowledge: Hazards and Challenges

a dialogue between an ardent seeker and death

IN THE TRADITION OF THE SEER-SCIENTISTS IN THE land of Bharat, there is no greater pursuit than the quest for Truth. The Sanskrit word 'bhagwan' is often translated into English as 'God'. But it actually stands for one who has knowledge of the creation and dissolution of this cosmos, of the process of birth and death, and who has the ability to distinguish between ignorance and knowledge.

Knowledge of Truth is an encounter with Ultimate Reality. This process leads one to discern the source or foundations of the universe, and enables the individual to experience the supraphysical 'formations' which support and sustain the cosmos. The process of knowing the causes or roots of the cosmos is to experience them. As knowledge and Reality are not at disjunction with each other in the rishi tradition, to know the Truth is to gain it. When one gains the Truth one is able to identify with Reality. And one who has done so is able to transcend the constant transitoriness of existence, reflected in the cycle of births and deaths. Knowledge of Ultimate Reality, or Brahma, leads to emancipation. This is the state of perfection and liberation which, in the tradition of the seer-scientists, every seeker aspires to attain.

Yet the investigation into the causes of the origin of the cosmos is a formidable undertaking, one which demands

exclusive commitment and dedication to the pursuit of the goal. It emphasises transcending the horizons of the mind and intellect, and of the attractions this universe offers to the seeker to distract him or her from this supreme goal. The paramount importance of this endeavour is evident from the conviction that this knowledge ensures an individual's final emancipation. The seer-scientists of the *Vedas* have repeatedly and in different ways underlined the importance of pursuing this goal of gaining true knowledge, of discerning the foundations of creation and the cosmos. This, they have said, leads the seeker to identify with the Truth, which is to reach the state of bliss or unalloyed joy. This effort is like scaling the highest mountain peak; the ascent is dotted with challenges and hazards which the various *Upanishads* explore with great subtlety. (The word 'upanishad'[288] denotes knowledge of that which is knowable.)

Knowledge destroys the seeds of ignorance, and the demanding nature of the pursuit of the goal of *brahma vijnana* — the knowledge of the origins of the cosmos — is best illustrated in the dialogue between Yama, the Lord of Death, and Nachiketa in the *Katha Upanishad*.[289] This *Upanishad* contains several profound formulations about the workings of the cosmos.[290]

BACKGROUND TO THE NARRATIVE

Ushan, the son of Vajasravas, once gave away all his possessions. On seeing him present a cow as a sacrificial gift, faith was born in his young son, Nachiketa. He asked his father: "Father, to whom will you give me?" When he repeated his question a second and then a third time, his exasperated father yelled at him: "I will give you to Death!" Nachiketa wondered what purpose his father would achieve by giving

him to Death. However, not wishing to disobey him, the young boy proceeded to the abode of Bhagwan Yama, the Lord of Death. The latter was not at home; Nachiketa spent three nights there, refusing to take any food offered by the women of the house, until Yama returned. According to tradition, a guest should not be deprived of food, especially a brahmana who is a seeker of knowledge. Upon his return, therefore, Yama said to Nachiketa: "Since you have lived in my house for three nights without food, such a respected guest as yourself may ask for three boons — one for each night."

THE DIALOGUE

As depicted in the *Katha Upanishad*, Yama and Nachiketa then begin their dialogue. Yama points out that there are two paths in this world from which to choose. One is of real benefit, the other merely offers pleasure. The first path leads to Self-realisation, while the other is the route of the enjoyment of sense pleasures. While those who follow the first path gain real well-being, those who follow the second path miss the relevance of gaining this human life. (Animals, birds and other beings may also enjoy the pleasures of the senses; but the human life has a far higher purpose.) Human beings arrive at the crossroads of these two paths. The wise select the beneficial path after careful consideration and reflection; those who are dull-witted opt for the path that gives pleasure.

VIDYA AND AVIDYA

Yama describes to Nachiketa the two types of knowledge: avidya (false knowledge) and vidya (true knowledge). Both are profound, and in total contradiction to each other. Knowledge

focused on the body and sense pleasures pertaining to it is avidya; this relates to something changeable, transient and perishable. An imperishable consciousness, known as atma, resides within the body, and knowledge of that is vidya.

Most of the time is spent in avidya in this world, and its impact is so overwhelming that scholars who are under its spell regard themselves as wise and learned. Then there are others who wander in traditional ignorance like "the blind leading the blind".

There are two types of people: those who see only the immediate, and those who can see the ultimate. Children often are unable to see the ultimate consequences of their actions. Those scholars who are unable to see the consequences of their actions are, therefore, somewhat like children. They continue to waste their lives in the allurement of wealth, power, worldly success and so on. Believing that there is no other world than this, they go to the domain of Yama again and again.

There are also those people who wish to know what Brahma is. It is almost impossible to find anyone who knows Brahma; even if such a person is found, people will not listen to his or her expositions thoroughly. Yet were they to listen thoroughly, they would still be unable to know Brahma by this means because Brahma is without form, beyond speech and beyond comprehension by the ordinary mind. So how can knowledge of Brahma be acquired?

Such knowledge of the tattwa of Brahma is only to be gained by prolonged reflection and investigation. This is because it is extremely subtle, and is incomprehensible by mere logic and material proof. It cannot therefore be gained through lessons given by someone else. It arises from within as a result of one's own *sadhana* (devotion, dedication, contemplation and earnest endeavour).

Yama also emphasises the crucial role of the guru, who is teacher and mentor and has himself or herself internalised the fundamental tattwa by *samadhi*. (S)he then passes that on to the seeker-student-disciple. Yama tells Nachiketa how vital it is to engage in an unflinching pursuit of the instructions, guidance and other messages communicated by the guru. He is surprised but delighted that Nachiketa has reached the point of such true and sincere curiosity, and has demonstrated such patience. Yama declares that no other person is more eligible than Nachiketa to acquire the knowledge of the fundamental tattwa (Brahma).

At this stage, Yama makes a statement which translators and commentators are unable to decipher unless they understand the technical meaning of such terms as agni and yajnya. He says this: "I have made this *panchagni* (five-dimensional fire) in the form of yajnya. From this yajnya fire I have gained the eternal tattwa by these changeable and non-durable means used in the course of yajnya."[291] Yama describes those impulses of avarice and greed which Nachiketa has rejected and abandoned because he knows that they are as fearsome as death. (These include weakness for fame and name, opulence and prosperity.) Yama tells Nachiketa that, by his sense of discrimination, he has been able to see that *amrita tattwa* which instils a sense of fearlessness. This tattwa is the foundation of the beginning and the end of jeeva. 'Amrita' means 'an imperishable and enduring attribute'. Jeeva is the Self, the foundation on which an individual exists, the source from which entities emanate. It is the centre around which the body of all individuals are woven. It is the platform on which the universe inside every person operates.[292]

Yama also introduces Nachiketa to another technical term — *purana purusha* — which is used to explain the existence of phenomena. "This purana purusha is extremely subtle, is

located deep in the inner body and is permeated with imperishableness. It is concealed in a deep cave, and one is able to see it with great difficulty." Yama chooses to be discreet and indirect, realising that many people are eager to gain access to purana purusha. He knows that only when the mind, intellect and prana become integrated in samadhi (contemplation) do wise and patient people experience the enduring and imperishable consciousness of Self, and that not everyone is able to attain this state. When that state is attained, the seeker is liberated from both happiness and sorrow.

All those who wish to investigate the origins of the cosmos and learn brahma vijnana should pay close attention to this dialogue between Yama and Nachiketa. Sadhana enhances dharma and enables one to gain this subtle tattwa and attain eternal bliss. *Nachitagni* (the agni named after Nachiketa) is the abode of bliss, and its doors are open to those who are prepared to make the genuine, persistent effort to attain it.

A few excerpts from the dialogue between Yama and Nachiketa in the *Katha Upanishad* are given below:[293]

(A VOICE): Look ahead, see how they have gone,
Those who have gone before us.
Look back, so will they go,
Those who will come after us.
A mortal man ripens like grain,
And like grain he is born again.

DEATH: Three nights, O Brahmin, you stayed in my house,
A guest worthy of homage, without any food;
Three wishes, therefore, deign to make in return.

NACHIKETA: That with his temper cooled, his anger subdued,
Gautama, O Death, be to me well-disposed,

That he greet me with joy, when by you I am dismissed —
This is the first of my three wishes.

NACHIKETA: In the world of heaven there is no fear;
There one has no fear of old age or you (Death);
Transcending these, both hunger and thirst,
Beyond all sorrows, one rejoices in heaven.
You, O Death, are studying
The fire-altar that leads to heaven;
Explain that to me, a man who has faith.
People who are in heaven enjoy the immortal state —
It is this I choose as my second wish.

DEATH: Nachiketa, you who understand
The fire-altar[294] *that leads to heaven,*
To the attainment of an endless world,
And that is its very foundation;
Know that it lies hidden
In the cave of the heart.

NARRATOR: He described to him that fire-altar —
The beginning of the world —
What type of bricks, how many, and how they are to be laid.
Delighted at him, then, Death said to him again:
Here I grant you another wish today.
This fire-altar will bear your very name.

NACHIKETA: There is this doubt about a man who is dead.
"He exists," say some; others, "He exists not."

I want to know this, so please teach me.
This is the third of my three wishes.

DEATH: As to this, even the gods of old had doubts,
For it is hard to understand, it is a subtle doctrine.
Nachiketa, make another wish.
Do not press me! Release me from this.

NACHIKETA: As to this, we're told, even the gods had doubts;
And you say, O Death, it is hard to understand.
But another like you I cannot find to explain it;
And there is no other wish that is equal to it.

DEATH: Choose sons and grandsons who would live 100 years!
Plenty of livestock and elephants, horses and gold!
Choose as your domain a wide expanse of earth!
And you yourself live as many autumns as you wish!
And if you would think this is an equal wish,
You may choose wealth together with a long life;
Achieve prominence, Nachiketa, in this wide world;
And I will make you enjoy your desires at will.

You may ask freely for all those desires
Hard to obtain in this mortal world;
Look at these lovely girls, with chariots and lutes;
Girls of this sort are unobtainable by men —
I'll give them to you; you will have them wait on you;
But do not ask me about death, Nachiketa.

NACHIKETA: Since the passing days of a mortal, O Death,
Sap here the energy of all the senses;

And even a full life is but a trifle;
So keep your horses, your songs and dances!

With wealth you cannot make a man content;
Will we get to keep wealth when we have seen you?
And we get to live only as long as you will allow!
So this alone is the wish that I would like to choose.

What mortal man with insight
Who has met those that do not die or grow old,
Himself growing old in this wretched and lowly place,
Looking at its beauties, its pleasure and joys,
Would delight in a long life?

The point on which they have great doubts —
What happens at that great transit?
Tell me that, O Death!
This is my wish, probing the mystery deep.
Nachiketa wishes for nothing other than that.

DEATH: The good is one thing, the gratifying is quite another;
Their goals are different, both bind a man.
Good things await him who picks the good;
By choosing the gratifying, one misses one's goal.

Both the good and the gratifying
Present themselves to a man;
The wise assess them, note their difference,
And choose the good over the gratifying.
But the fool chooses the gratifying
Rather than what is beneficial.

You, Nachiketa, have looked at and rejected
Things people desire, so lovely and lovely to look at;
This disk of gold, where many a man founders,
You have not accepted as a thing of wealth.

Far apart and widely different are these two:
Ignorance and what is known as knowledge;
I take Nachiketa as one yearning for knowledge;
The many desires do not confound you.

Wallowing in ignorance, but calling themselves wise,
Thinking themselves learned, fools go around,
Staggering about like a group of blind men,
Led by a man who is himself blind.

This passage lies hidden from a careless fool,
Who is misled by the delusion of wealth.
Thinking, 'This is the world; there is no other,'
He falls into my power again and again.

Many do not get to hear of that journey;
And even when they hear,
Many do not comprehend it.
Rare is the man who teaches it,
Lucky is the man who grasps it,
Rare is the man who knows it,
Lucky is the man who is taught it.

Although one may think a lot, it is difficult to grasp
When taught by an inferior man.
Yet one cannot gain access to it
Unless someone else teaches it.

For it is smaller than the size of an atom,
A thing beyond the realm of reason.

One cannot grasp this notion by debate,
Yet it is easy to grasp when taught by another.
You are truly steadfast, dear boy;
You have grasped it, dear boy;
You have grasped it.

Satisfying desires is the foundation of the world;
Uninterrupted rites bring ultimate security;
Great and widespread praise is the foundation —
These you have seen, wise Nachiketa,
And having seen, firmly rejected.

The primeval one who is hard to perceive,
Wrapped in mystery, hidden in the cave,
Residing within the impenetrable depths —
Regarding him as an insight
Gained by inner contemplation,
The wise abandon both sorrow and joy.

When a mortal has heard it and understood it;
When he has drawn it out
And grasped this subtle point of doctrine,
He rejoices; for he has found
Something in which he can rejoice.
I consider my house open
To him, Nachiketa.

NACHIKETA: Tell me what you see as
Different from the right doctrine and from the wrong;
Different from what is done here and what is left undone;
Different from what has been and what is yet to be.

DEATH: The word that all the Vedas *disclose;*
The word that all austerities proclaim;
Searching which people spend a lifetime as a seeker
That word now I will tell you in brief — it is OM!
For this alone is the syllable that is Brahma!
For this alone is the syllable that is supreme!
When, indeed, one knows this syllable,
One obtains one's every wish.

This is the best support of all!
This is the supreme support!
And when one knows this support,
One rejoices in Brahma's word.

The wise one —
He is not born, he does not die;
He has not come from anywhere;
He has not become anyone;
He is unborn and eternal, primeval and everlasting;
And he is not killed when the body is killed.
Finer than the finest, larger than the largest,
Is the Self (atma) that lies here hidden
In the heart of a living being.
Without desires and free from sorrow,
A person perceives the grandeur of the self.

Hidden in all beings,
This Self is not visibly displayed,

Yet people of keen vision see it,
With eminent and sharp minds.

It has no sound or touch, no appearance, taste or smell;
It is without beginning or end, undecaying and eternal;
When a person perceives it, fixed and beyond the immense,
The person is freed from the jaws of death.

The wise person who hears or tells
The tale of Nachiketa,
An ancient tale told by Death,
Will rejoice in Brahma's world.

Shaunko ha vai mahashalo angirasam
Vidhi vad upasannah prapaccha
Kasmin nu Bhagavo vijnate sarvam idam
Vijatam bhavateeti

Tasmai sa hovaahca — dve vidye veditavye
Iti ha sma yad
Brahmavido vadanti para cha eva apara cha.

MUNDAKA UPANISHAD 1:1:3

Shaunaka, the great householder, approached Angiras in an appropriate manner and asked: "O Respected Sir, what is that knowledge which encompasses all that is worth knowing in this universe?"

Angiras replied: "There are two kinds of knowledge worth acquiring, *apara* and *para*, the knowledge of here and there, of lower and higher. This is what the seer-scientists who know the sciences of creation tell us."

Veda and Knowledge

THE WORD 'VEDA' IS DERIVED FROM THE ROOT *VID*, which means 'to know'. The word 'vidya', translated as 'knowledge', comes from the same root. The group of words which grow from this root signify to find, discover, acquire, accomplish, obtain and possess. In a broad sense, therefore, 'veda' means 'knowledge'.

However, over time the meaning of this word has become frozen in the interpretation of 'veda' as certain celebrated works which comprise the cultural and civilisational roots of the people of Bharatavarsha. Thus, the *Vedas* came to suggest the four *Samhitas* (collections) of *Rik Veda*, *Yajur Veda*, *Sama Veda* and *Atharva Veda*. These became 'veda', by which is denoted books of knowledge. Since the word 'knowledge' has different connotations in the cultural traditions of Bharatavarsha and the West, it is appropriate to explain and analyse this term in these two cultural contexts and, more specifically, to explore the relationship between the *Vedas* and knowledge.

There are three distinct instruments of knowledge in the philosophy of knowledge propounded by the scholars of Bharatavarsha. These are perception, inference, and reliable authority. Perception is the act of reflective discerning which arises through (sense contact with) the particular *visaya* (contents) of sensing. Inference is of three varieties, as

described below. Reliable authority is mantra — the reliable testimony and/or reliable utterances of the rishis (the seer-scientists).

Knowledge of what is beyond the senses arises through the variety of inference known as 'inference based on general correlation'. That which can be known but not established even through this kind of inference is to be established through reliable authority. Inference is dependent on perception and is of three kinds:

a. prior or antecedent inference based upon the perception of a cause, such as when one perceives a black rain cloud one infers that it will rain;
b. subsequent or posterior inference based upon the perception of an effect, such as when one perceives that a river is swelling and muddy one infers that it has rained further upstream; and
c. inference based upon general correlation, such as when one perceives that mango trees are flowering in Lucknow one infers that they are also flowering in Allahabad.

These three kinds of inference also clearly relate to the three times: in our first example, the inference is related to what will occur; in the second, the inference relates to what has occurred; and the inference of the last example relates to what is now occurring under certain comparable and general conditions. Sound, touch, colour, taste and smell are the objects of knowledge perceived by the sense capacities. What cannot be grasped by the five sense capacities is to be established by inference (such as the sight of smoke giving rise to the inference of fire); and that which cannot be established by either of these is established by reliable authority or verbal testimony. Reliable authority refers to the statements of someone who has no faults and cannot therefore utter a false statement.

Knowledge has three synonyms — *prakasha* (light), *avagama* (understanding), and *bhana* (manifestation) — and two types: internal and external. Some seer-scientists have described the two forms of knowledge as para (higher) and apara (lower),[295] to which we shall return later in this chapter.

The basic thesis of the Western philosophy of empiricism is that all knowledge of matters of fact (that is, all *a posteriori* knowledge) derives from experience. It attempts to show that mankind's system of knowledge is stratified: while some types of knowledge depend on others, some do not; and the latter form the foundational units which give support to the whole epistemic system. Some Eastern philosophers declare that ideas are in the mind of God, who from time to time bestows intellectual illumination upon human beings. Others hold that all the ideas required for *a priori* knowledge are innate in each human mind. It is argued that, because these basic units rest upon direct experience, ultimately all factual knowledge is derivable from experience. However, when Bertrand Russell asserts that nearly all of mankind's knowledge is of the latter type he is circumscribing human experience within the confines of the present, as related to the experiencer.

In recent times, Western scholars and philosophers have tried to draw a distinction between 'knowledge by acquaintance' and 'knowledge by description'. The former is based on direct experience and needs no justification. The latter is information which is not based on direct experience. Then there is a third category of knowledge which is based on the direct experience of an individual. This is just a shade away from what we will describe as 'pure knowledge'. It is pure consciousness, which becomes knowledge when applied to an object, an individual or an entity.

No one would argue that one can acquire information by looking, feeling or listening; but philosophers who have taken

seriously the possibility of learning by mere thinking have often considered that this requires some special explanation. In the view of the seer-scientists, philosophers and scholars of the *Vedas*, the predisposition towards jnana (knowledge) is inherent in the intellect. In addition to its basic nature of reflective discerning, a set of eight bhavas (fundamental predispositions) or instinctual tendencies guide the course of life of a sentient being.

Knowable objects are those which can be known by an instrument of knowledge: some of these are known by perception, some by inference, and some by verbal testimony. There are five organs of action (the larynx, hand, foot, anus and parts of generation) and five organs of knowledge (the eyes, ears, nose, tongue and skin). Mind, the 11th organ, is an organ of action among the organs of action and an organ of knowledge among the organs of knowledge. For example, someone does the work of a driver when driving the car to the university; (s)he does the work of a professor when teaching students; and (s)he does the work of a parent when taking care of the children. In similar fashion, the mind operates with respect to the functioning both of the organs of knowledge and of the organs of action.

The basic characteristics of a complete system of knowledge have been identified and enumerated by scholars of darshana. This constitutes a complete science, containing aphoristic statements which indicate the main topics. Such a complete science includes the following:

- a discussion of the instruments of knowing (*pramana*);
- a discussion of the 'parts' relevant to a subject matter (*avayava*);
- a statement which describes the overall structural components of the system (*anyunata*);

- a discussion of doubts relating to general principles (*samsaya*);
- a discussion of specific technical problems (*nirnaya*);
- brief definitions (*uddesa*);
- longer or expanded definitions (*nirdesa*);
- a discussion of basic principles in sequential order (*anukarma*);
- a discussion of technical terminology (*samjna*);
- a discussion of what is to be done or practical advice that one should follow as a result of following the science (*upadesa*).

TYPES OF KNOWLEDGE

There are two kinds of knowledge, known as vidya (knowledge) and avidya (that which is non-knowledge). Doubt, for example, is a species of non-knowledge. Error is defined as the apprehension of something as what it is not. Error is caused by faults which not only frustrate the origination of true knowledge but may also produce error. Its opposite is a valid judgment which is not caused by faulty understanding. Another kind of non-knowledge is 'indefinite knowledge', defined as the judgment which arises when a thing is apprehended in its generic character but not in its specific character. This is different from doubt in the strict sense of the term.

Dream is another kind of non-knowledge. The sceptic maintains that there is nothing to distinguish dreams from waking experience, but this can be countered by pointing out the distinction between the two; and also by the fact that everyone acknowledges that dreams are false while waking experience is not. Thus, a denial of this would be contradicted by common experience.

Knowledge may be described as a representation of facts (including generalisations) and concepts organised for future use, including problem-solving. There is useless knowledge, such as knowing which is the third or the 13th longest river in the world. On the other hand, there is also knowledge which far transcends that which is necessary for immediate survival. Civilisation's future depends on the latter kind of knowledge. It is also useful to distinguish knowing *how* from knowing *what*, for knowledge includes the skills of knowing how to make effective use of individual facts and generalisations. When appropriately organised, it allows us to transfer experience from the past to the future, to predict and control events, and to invent new futures. It is, therefore, a crucial component of intelligence.

It is not possible to maintain that every case of true belief is a case of knowledge. A paranoiac might believe, without good grounds, that a certain person was trying to injure him or her. But even paranoiacs have enemies, so it may be that in this particular case the paranoiac's belief is correct. Such a case of true belief would not be a case of knowledge. The question arises, therefore, what further condition or conditions must be added to true belief to yield knowledge. As mentioned earlier, there are the three instruments of knowing: perception, inference and reliable authority. All other instruments of knowing can be reduced to one of these three.

Awareness is a fundamental predisposition of the intellect, whereby the intellect assumes the form of that which is to be known. Intellectual operations are assisted by the purposive intellectual activity of the mind, and the various sensings by the sense capacities. The basic determinations of the intellect encompass the operations of past, present and future (including memory, imagination, fantasy, dreaming and so forth).

Some scholars translate 'jnana' as 'knowledge'. Yet although the term 'knowledge' in Western usage is employed in several ways, the term jnana does not exactly correspond to any of them. Some scholars think of knowledge as a judgment — not judgment as (timeless) proposition, but the actual judging performed by the knower. Judgments may be true or false. A judgment is perceptual and true only if 1. it is produced from contact between a sense organ and an object; 2. it is not verbal; 3. it does not wander; and 4. it is definite. Examples of erroneous perceptual judgments include seeing two moons when one applies some pressure to one's eyeball; finding what appears to be a piece of silver on the beach but which is actually a shell; a crystal appearing red because of the red flower behind it; and an object appearing yellow to someone with jaundice.

The word 'know' means an activity only in a secondary sense. The activity of the intellect, an idea, comes to be called 'knowledge' because it is a reflection of knowledge (proper), just as the word 'cut' means the separation of something into two in a secondary sense only. Knowledge is eternal; it cannot be produced by the intellect or indeed by anything at all. It is a function of awareness, which does not require another awareness to be known — it is in its own nature to illuminate, just as it is in the sun's nature to light itself. Awareness by means of the three instruments of knowledge results in reflective discerning by the intellect, which is possible because of the presence of consciousness. Although distinct from the intellect, consciousness is nevertheless an essential catalyst in the process of the occurrence of awareness.

There are five cognitive conditions of awareness, namely knowledge, error, conceptual construction, sleep, and memory. These conditions may be afflicted or unafflicted. The former conditions generate latent dispositions and

karmic residues which exacerbate avidya ('ignorance') and progressively lead to further frustration, rebirth and transmigration. The latter conditions generate latent dispositions which counteract the afflicted dispositions, gradually destroy the residues which exacerbate ignorance and progressively lead to discriminating realisation. Consciousness becomes reflected in the intellect, thus making it appear as if the intellect were conscious. Experience actually occurs only in the intellect, but it appears as if consciousness experiences things because its *chaya* (image) has become reflected in the intellect.

True knowledge is to be achieved by the methods of concentration, meditation and yoga. Yogis are believed to have unusual powers, among them the ability to perceive things not ordinarily perceptible by human beings. Unusual kinds of perception are not limited to yogis, however. There is a kind of immediate awareness called *pratibha*, which we may translate as 'intuition'. This is a source of knowledge for ordinary people on occasion and for sages regularly. Examples of intuitive knowledge occur when, for example, we know immediately that a certain event will happen in the near future (say, our long-lost relative will arrive) or that someone near and dear to us has just died in a faraway place. Some scholars explicitly classify intuition as a kind of perception and accept it as valid.

If there is knowledge there is bound to be ignorance, and the philosophical tradition of Bharatavarsha identifies five varieties of ignorance and 28 varieties of dysfunction. We do not propose to dwell here on the various sophisticated aspects of the theory of knowledge developed, enunciated and applied by the seer-scientists, scholars and seekers who drew inspiration from them. Contrary to the assumption of modern rationalists that darshana and vijnana are speculative

and bereft of consistency and logic, their formulations have an amazing degree of internal consistency and coherence.

Cognition, according to them, is the (special and instrumental) cause of the common utterance of words intended to communicate, and is knowledge in its widest sense. It embraces sensation, perception, conception and notion, and is of two kinds: apprehension and remembrance. Apprehension is the simple knowledge of a fact, and is an act or condition of the mind in which it receives a notion of any object. A dog knows its master but does not cognise him, because it does not have the faculty of forming a mental conception of the master. An absent-minded person sees an object but does not cognise it, because her or his mind is not working to form a notion of the object.

Remembrance is defined as knowledge born of an abiding impression alone. When we have seen an elephant with a driver on its back and then later see either the elephant or the driver alone, at once we remember the other sight. This knowledge is said to be remembrance and is solely due to the impression left on our mind after seeing the elephant with a driver on its back. That which brings back to mind the memory of the absent object by the law of association is called the 'reviver of that *sanskara*'.

Anubhava (experience) is 'all knowledge other than remembrance' — that is, all cognitions which are newly acquired and are not repetitions of former ones. The three words buddhi, anubhava and smriti are rendered into English by 'cognition', 'apprehension' and 'remembrance' as their nearest equivalents. Remembrance, recollection and reminiscence are analogous but easily distinguishable. Remembrance is an idea which recurs in the mind without the operation of an external object on the sensory nerve and is thus opposed to perception. It becomes recollection, however,

when it is sought after and found with some effort. Smriti is this kind of remembrance and probably includes recollection. Remembrance may seem to be concerned with impressions gained from perception only; but there is no reason why a former inference stored in the mind, or an impression produced from a previous remembrance, should not be remembered as well. Hence smriti, properly speaking, is general and encompasses all impressions, whatever their original derivation.

Reminiscence is the act by which we endeavour to recall and reunite former states of consciousness, and is a kind of reasoning by which we ascend from a present consciousness to a former one.

Cognition is knowledge which becomes the subject of the consciousness that manifests in the form of 'I know'. Knowledge is of the nature of light, because it dispels the darkness of ignorance and illuminates all objects to the mind's eye. In fact, the universe seen analytically consists of knowable objects, the instrument of knowledge and knowledge itself. When these three elements are removed, that which remains is nothing but condensed or unconditioned consciousness.

Let us now pick up a thread we mentioned earlier in this chapter. According to the *Vedas* and the *Upanishads*, two kinds of knowledge are to be acquired, namely apara and para — lower and higher, the terrestrial and the transcendental. We could also describe them as external and internal. We are generally aware only of sciences dealing with the knowledge of things. That which is described as apara (external) is constituted of the four *Vedas* — the *Rik*, the *Sama*, the *Yajur* and the *Atharva Veda* — and the six vedangas: *shiksha* (phonetics), *kalpa* (guidelines for application and experimentation), *vyakarana* (grammar), *nirukta* (etymology), *chhanda* (metre) and *jyotisha* (astronomy/astrology).

However, all these comprise knowledge contained in books. The 'higher knowledge' is that which goes beyond the meaning of language. In other words, supreme knowledge transcends the semantics of darshana. Knowledge of the *Vedas* springs from a direct encounter with supraphysical energies and forces, and it is these forces and these encounters which the 'books' of the *Vedas* seek to explain.

Para vidya is the knowledge of akshara, a term which means a letter of the alphabet but also bears the meaning of 'that which has no destruction'. (We discuss its meaning and dimensions in more detail elsewhere in this volume.) For our present purposes, we can say that para vidya comprises knowledge which leads the pursuer to a rediscovery of her or his own true nature and to encounter atma. This branch of knowledge lies beyond words, and the *Vedas* point us in the correct direction to reach it.

In the tradition of Bharatavarsha, knowledge can be acquired through one's own efforts and with the grace and benevolence of the guru, who is both teacher and guide. It is significant, however, that we often do not know the names of the people who composed a particular mantra which communicates profound knowledge and enriches the texts of the *Vedas*, *Brahmanas*, *Aranyakas* or *Upanishads*. It appears, as Swami Chinmayananda has said, that the rishis forgot to subscribe their names to their own masterpieces. Thus we have an incomparable literature, the exponents of which are unknown to us. We know only that a personality lay behind these sparkling words of wisdom, one who revelled in the subjective experience of the very rich theme described in such a wealth of detail. They chose to remain behind the screen, as it were, sincerely feeling that the knowledge they gained and to which they gave expression was not theirs. They only happened to hear the mantras from within as though spoken

by somebody other than themselves. Indeed, the term 'shruti' means 'that which is heard'.

The earnest pursuit of knowledge of the Ultimate Truth is so intense in the rishi tradition that a disciple asks his guru: "Is there a knowledge, O Teacher, knowing which all other kinds of knowledge become known; and if there be such a knowledge, in what way is it different from the ordinary kinds of knowledge known to us; and how can I attain it?"[296] In his reply, seer-scientist Angiras explains that knowledge possibilities fall into the two distinct groups of lower and higher, the terrestrial and the transcendental.

It is possible, and it very often happens, that a student is unable to comprehend the meaning of the formulations conveying either of these two levels or forms of knowledge. But this should not surprise us, because the terms used by the seer-scientists have several layers of meaning. In fact, every culture vests words with meaning relevant to it. For example, modern scientists use the language of mathematics to describe complex physical phenomena, yet these mathematical propositions will convey nothing to one who is not conversant with that language. If a statement in higher mathematics is not intelligible to this person, however, we cannot proclaim that higher mathematics is meaningless; such a statement would be nonsensical. In the present-day world of computers and information technology, an address does not mean where one lives or receives one's mail but is the location of information in the computer machinery. A boot is not one of a pair of shoes worn on the feet; its meaning is to start up the computer. There are a number of other obvious examples from this field of technology alone.

By this reasoning, we can see that it is extremely unfortunate that modern scientists and scholars should dismiss the formulations of the seer-scientists simply because

they are not conversant with the language of the rishis. Rather, they should take up the challenge of developing the capability to 'enter into' the specific cultural milieu, empathise with the knowledge constructs underpinning those thoughts, and try to discover the message and meaning of the terms used for the purposes of communicating that knowledge.

The seer-scientists of the *Vedas* do not make dogmatic assertions, but guide the seeker to discover the Truth for herself or himself. In a sense, the guru orients the disciple to gain the Truth from what would appear to be mundane experiences, such as the traditional example of the snake and the rope. In the darkness, someone may mistake a rope for a snake and be afflicted at once by a terrible fear and anxiety. In the confusion, (s)he may even suffer the (false) effects of a 'snake-bite'. Verbal assurances alone do little to comfort the confused person. It is only when (s)he is led to the source of confusion and shown the rope that the illusion vanishes and the realisation dawns that the snake is a myth and the rope is the reality. The snake, therefore, is the product of ignorance about the reality of the rope. With the removal of ignorance, the Truth dawns. So the guru or teacher can guide the seeker to the realisation of Truth but, ultimately, the realisation has to be gained by the seeker. The guru is merely a facilitator.

In the tradition of the seer-scientists, the pursuit of knowledge enables the seeker or student to acquire proficiency in dealing with the world in which (s)he lives. But the more important and fundamental goal is to discover and experience the Truth which underpins the reality that surrounds us. In other words, to come face to face with Supreme Reality. Knowledge is the discovery of the light of intelligence, the light which illuminates every individual and event in the cosmos and which is the fundamental principle

in everything. The search for that light is akin to the modern scientists' search for a unified theory in the material domain.

The rishis often describe Supreme Reality as *adrishyam* (invisible),[297] because what is visible should be an object of seeing; while the light as the central life-force is the seer in us, that which looks out to see the seen (or scene). Using this same instrument of vision, the seer cannot see herself or himself. For example, we can observe the moon through a telescope, but we cannot use that instrument to see ourselves. We can see things with our eyes, but we cannot use our eyes to see our own eyes. So the term 'invisible' has to be properly understood in the context of the thought construct underpinning it.

Reality is also described as *agotram* (unoriginated). To presume otherwise would be absurd, because if Reality has an origin then this would suggest that there was a time when Reality was not there. Yet Reality, in its basic sense, is eternal; and knowledge is the pursuit which enables us to experience and encounter that Ultimate or Supreme Reality. The seer-scientists guide us on the path which can lead us to that knowledge, and the *Vedas* make this path achievable.

Asad wa idam agra aseet tad wahuh kim sad aseet
Rishaya waeva tada agre sat aseettad ahuh
Ke te rishayah?
Prana wa Rishi aste
Sarvasmat adi ihhantah... arishan
tasmat rishyayah

SHATPATHA BRAHMANA 6:1:1:1

What was there before existence (before all individuals and entities came into existence)?
There was non-existence.
What do you mean by non-existence?
There were rishis (before all this — the cosmos — came into existence).
What do you mean by rishis?
Prana (supraphysical energy) is rishi.
That (supraphysical energy) which is activated of its own volition is rishi.

Veda, Brahmana and Rishi[298]

WESTERN SCHOLARS HAVE DEFINED 'VEDA' IN various ways, including "revealed scripture"[299] and "the oldest documents of Indian religious literature".[300] "What can be more tedious than the Veda, and yet what can be more interesting, if once we know that it is the first word spoken by the Aryan man?" asked Max Müller, the man who 'launched' the project of translation of the *Vedas* into English.[301] This project began in 1930 with the establishment of the Boden Professorship in Oxford and the appointment of H.H. Wilson as the first holder of the chair "to promote translation of the scriptures in Sanskrit, so as to enable his countrymen to proceed in the conversion of the natives of India to the Christian religion."[302]

The *Vedas* have also been introduced as "certain celebrated works which constitute the basis of the first period of the Hindu religion",[303] while the *Brahmanas* have been defined as "a class of works (they contain rules for the employment of the mantras or hymns at various sacrifices)."[304] According to these 'experts', a rishi "is a singer of sacred hymns, an inspired poet or sage, any person who alone or with others invoked the deities in rhythmical speech or a song of sacred character."[305]

As our readers have progressed through this work, they will have began to realise what grotesque misinterpretations

of these terms have been made by a whole class of 'experts' on Vedic literature.[306] These interpretations have caused a gross distortion in perception and a grave misunderstanding of the Vedic way of life. Insights into the principles and processes of the organisation and regulation of the cosmic order have been ignored or ridiculed. The seer-scientists' knowledge of the scheme of creation and the relationship between the creator and the creature has been submerged by the debris of arbitrary explanations. And the related thought system, illustrating the relevance of those principles in the individual and social domains, has suffered from a lack of sustained study as well as from political subjugation, emotional perversion and social disorder.

The rishis or seer-scientists of the *Vedas* view the phenomenon of life as a vibrant individual, which exists everywhere and in everything. Their view of the cosmos and the universe is wholistic, not the sum of different and disparate parts. They see the cosmos as akin to a ceaseless flow in which every wave has its own individuality while remaining an integral part of the stream. Every drop of water in each wave has its own individuality; but all drops together comprise the current. The drops merge into the wave and the wave into the stream; the stream embraces the ocean and is subsumed in it. Thus, the drop and the ocean are intertwined. The drop is integral to the ocean while the ocean, with all its properties, is present in the drop. The microcosm and the macrocosm reflect each other; in fact, in a fundamental sense, they are the same.

Just as water appears in the different forms of a drop, a wave, a stream, a river and an ocean, so does life manifest itself in various forms while remaining basically the same. This is the internal coherence of the cosmic order. The principles on which the management of that order is based are also

internally consistent. These principles are complex and subtle. In the normal course of events, their breadth and expanse make their application somewhat incomprehensible to human beings because the human organs of knowledge are limited in their capacity to comprehend and absorb them. Any tools which human ingenuity fabricates to enhance the capacities of these sense organs retain that basic limitation.

But these principles are discernible in a subtle way, at a level more sophisticated than subatomic phenomena. Comprehension becomes possible because the same principles which govern and guide the cosmos also govern and guide the individual human order. To discern and experience these principles one has to travel inwards, on a journey which is as exciting, revealing and enlightening as a sojourn outwards into the planets, galaxies and beyond.

The seers and saints experienced and encountered the subtle forces which regulate the process of creation and discovered the principles by which order is enforced in the cosmos. They established communication with these supraphysical forces through a composite and intricate web of theory and practice, knowledge and experiment, intuition and intellect within themselves. Having taken this journey, they then sought to ensure lasting happiness and harmony in the universe by structuring individual lives, family life and society on the basis of the broad principles which underlie the governance of the cosmic order. The *Vedas* are the foundation of their experience, perception and knowledge. They contain the body of this knowledge in a collection of mantras which comprise the four *Vedas* and their auxiliary texts. To be more exact, what we know as the basis of the *Vedas* enunciates the source of creation, the fundamental tattwas or elements which bring this cosmic order into existence, and the forces (which are much smaller than the physical factors of atom, neutron

and proton) that comprise the various universes. These basic tattwas are enunciated, elucidated and applied in the *Vedas*.

The first individual to emerge in the process of creation is prana or supraphysical energy, which is of two types. One is of the nature of elements and cannot be broken down into smaller individuals; while the other is of the nature of compounds which comprise two or more individuals. The supraphysical energy of the first category comes into motion spontaneously without any external stimulus, and is known as rishi. The seer-scientist who discovered a particular supraphysical energy was honoured by the bestowal of that name. Bhrigu, for example, is the name of the seer-scientist who discovered a supraphysical energy called bhrigu. The same is true of Angira, Atri, Vashishtha, Agastya and other rishis.

Fierce controversy has raged among traditional scholars as to whether the *Vedas* were configured by humans or not. Are they 'man-made' or 'divine'? This controversy in itself reveals a colossal ignorance about the meaning and significance of the term 'veda'. The languages of the *Vedas* are *chhandogya* and its successor, Sanskrit. The 'books' or 'sacred texts' known as the *Vedas* describe and explain basic elements and forces; and as 'tools' of explanation and clarification, these texts are obviously products of human ingenuity and endeavour. However, the books of 'veda' deal with the phenomena, forces, attributes and elements of veda itself, which is not a human creation. Its forces are 'natural' in the sense that they are parts of the cosmos. The difficulty in describing and discussing them arises from the inadequacy of language as a tool of communication. Even in Sanskrit, which is organised on the same principles as those which regulate the cosmic order, the task of deciphering terms is daunting. It requires study of the six 'limbs' of the *Vedas*, namely shiksha

(phonetics), vyakarana (grammar), nirukta (etymology), kalpa (applications), chhanda (prosody) and jyotisha (astronomy/astrology). The six vedangas (literally meaning 'limbs of veda') are traditionally considered essential prerequisites for the study of the *Vedas* and *Upanishads*.

Shiksha mainly covers Vedic and general phonetics, and is indispensable within a tradition whose texts have been orally transmitted and maintained. The term shiksha, when used in the sense of 'distinct discipline' appears for the first time in the *Tatteriya Upanishad*, which enumerates its six constituents as *varna* (individual sounds), *svara* (accent), matra (quantity or temporal extent), *bala* (organs of pronunciation/articulation, effort*), saman* (articulation), and *santana* (rules for euphonic combination).

Nirukta (etymology) is the science of the etymological meanings of Vedic words. There is only one authoritative text on this subject, comprising the 'twin' texts of *Nighantu* and *Nirukta* (literally 'Vedic lexicon' and 'etymological exposition'). These were composed by Yaska in approximately the ninth century BC. Yaska declares that without this science there can be no understanding of Vedic mantras, and that one who recites the veda without knowing its meaning is like a *sthanu* (post) or a *bharshara* (mere load-bearer).

Vyakarana[307] (grammar) is regarded as the most important of the six vedangas. Panini's *Ashtadhyayi* — a grammar of both Vedic and classical Sanskrit words — is the most authoritative text in this discipline, marking the culmination of a great grammatical tradition. Panini has recorded his 64 predecessors, whose works were superseded by his own monumental work. Vyakarana studies linguistic phenomena through the methods of morphological and syntactic analysis. It also bridges the two disciplines of phonetics and etymology.

Chhanda (metrics) encompasses the laws of verification or metrical composition. Sanskrit verses are regulated by two kinds of quantity:

1. Syllables: the number of syllables are counted, and the metre based on this arrangement is known as *varnika* metre; and
2. Syllabic instant: the number of syllabic instants are counted, and the metre is known as *matrika* metre, which indicates the relative time/period taken in the articulation of a phoneme/a single speech sound; it also means a short vowel. (The term 'chhanda' has a deeper technical significance, and is used in veda in the sense of verification of the measurement of supraphysical energies.)

Jyotisha (astronomy) is a discipline associated with the determination of the position of the celestial bodies (the sun, moon, planets, etc.). It expounds rules for the calculation of new and full moon days, equinoctial days, the movement of stars, the location of planets and so forth.

Kalpa deals with the performances based on the Vedic texts. These are often related to a goal to fulfil the wish of the performer and are associated with the various aspects of human life, such as birth, marriage, death and religious performances. However, as we explain in the chapter "Veda Vijnana: Applications and Experiments", these performances are based on the interplay of supraphysical energies in the cosmic domain. With time, this vast literature became better organised in the form of a fully-fledged philosophical system known as Meemamsa, which mainly deals with the injunctive sentences of the *Vedas* relating to these performances.

In a description of great significance, the scholars depict veda as *veda purusha* (veda, the person), and portray shiksha as the nose of veda purusha, vyakarana as his mouth, kalpa as his

hand, nirukta as his ear, chhanda as his foot and jyotisha as his eye. This assignment of specific parts of a body to the various 'limbs' of veda has a method and meaning. For example, breathing is one of the important functions of the nose and shiksha (phonetics) is the life breath of the Vedic mantras. Each syllable has to be enunciated strictly according to its measure; and it is raised, lowered or pronounced evenly. Each of these choices is made with deliberation and for a specific reason, linked to the workings of the supraphysical energies in the cosmic arrangement. Similar ideas are discernible in the case of the other 'limbs' or associated branches of Vedic knowledge, although it is well-nigh impossible to translate such concepts.

In fact, language is an inadequate tool for the communication of the experience and knowledge of the creation–creator interface. So the seer-scientists took recourse to a communication conduit which operates at four levels: instructions, explanations, practice, and intuition. The level of the recipient and the depth of her or his relationship to the communicator determine the choice of one of these four channels of communication, or a judicious mix of them.

Adesha (instruction) is applicable when the recipient is not equipped with an independent decision. For example, if a child is on the verge of putting his hand into the fire, we direct him not to do so. When an adult is likely to commit a harmful act, we 'advise' her of the drawbacks of that action, thus providing explanation, the second choice of communication method. In the third channel of communication, known as *achara* (practice), the message is conveyed by the action of the communicator. The fourth channel consists of what one could describe as 'extra-sensory communication', in which there is neither direction nor advice, nor any 'practice' which conveys the message.

The subject of the communication is another important factor in the selection of the form of communication. In essence this is a careful blending of theory and practice, which makes these communication conduits potentially effective. A divorce between theory and practice, knowledge and experience, intellect and intuition brings about a rupture among various facets of an individual and between the individual and society. This rupture lies at the root of the gradual incomprehension of the view of life propounded by the seer-scientists. Such incomprehension is a blight on humankind, increasing in intensity as the fragmentation of the integrated personality increases and the individual becomes ever more alienated from society and the natural environment.

It is our belief that the next revolution in the human order will seek to restore harmony in the wholistic nature of a person's inner journey and outward sojourn, and strike a balance between the individual and society and between humans and nature. This revolution will be based on the principles which synchronise with the orderly governance of the cosmos, notwithstanding occasional earthquakes and tempests. Pandit Motilal Shastri, the author's guru, teacher and mentor, has put forward the proposition that humankind passes through phases of revolutionary epochs, which he paints in different colours: green, yellow, red and white. The first revolution witnesses breakthroughs in agriculture; the second marks dramatic industrial advance; and the third is the red revolution, spurred on by such materialist philosophy as Karl Marx powerfully enunciated. All these revolutions are accompanied by conflict and violence and therefore do not bring about durable peace.

Pandit Motilal Shastri considers that humanity is now poised for the fourth, a 'white revolution', which is essentially

cultural in content. This will be a fundamental transformation and will usher in an era of harmony between human beings and nature, between men and women and the animal kingdom, and between different sections of the human race. It will be based on the principles that reflect the orderliness we witness in the functioning of the cosmic matrix. This 'cultural revolution' (not to be confused with the 20th-century movement known by this name in China) derives its inspiration from sanatana dharma, the eternal and enduring principles enunciated by the rishis and articulated in the *Vedas*. This white 'cultural revolution' will herald a regime of inner tranquillity for the individual and peace and harmony in the world.

IGNORANCE OF VEDIC TERMINOLOGY

The ignorance of Western 'experts' about the terminology employed by the seer-scientists led them to declare that the *Vedas* are "composed in archaic Sanskrit". Because they failed to appreciate the historical background of the civilisational period in which the seer-scientists 'discovered' the *Vedas*, these 'experts' arbitrarily decreed that "the Indo-European-speaking peoples entered India from the Iranian regions."[308] Although they conceded that "no definite date can be ascribed to the composition of the Vedas, some of which possess high literary merit,"[309] they asserted that "the period of about 1500-1200 BC would be acceptable to most scholars."[310]

They totally overlooked the concept of supraphysical energy, describing these forces instead as "hereditary deities, who for the most part personified various natural and cosmic phenomena, such as fire (agni), sun (soorya and savitr), dawn (*usas*), storms (rudras), war and rain (Indra), honour (mitra)."[311] In fact, the concept of theists and atheists in the ancient literature of Bharatavarsha is not based on those who

believe in God and those who do not. Rather, it is based on those who confine their understanding of the cosmos to physical factors and those who see beyond these to recognise the complementary existence of supraphysical factors.

We need spend no further time and energy here on illustrating or refuting such distortions. One example will suffice: the *Atharva Veda* is described as "a collection of hymns, magic spells, and incantations that represents a more folk level of religion and remains partly outside the Vedic sacrifice."[312] In actuality, *Atharva Veda* contains invaluable principles which have been applied to the development of the science of health care and longevity, alchemy and the preparation of medicines, among others. These grave misrepresentations and distortions were often motivated by political and/or evangelical vested interests.

The entire corpus of Vedic literature is shruti, meaning 'that which is heard'. "Srotra means the 'ear'. The *Vedas* have been handed down orally from generation to generation and have not been taught and learned from any written texts. That is why they have got the name 'shruti'."[313] The *Vedas* encompass the *Samhitas* and the expositions that came to be attached to them, the *Brahmanas*, the *Aranyakas* and the *Upanishads*. Western 'scholars' have chosen to label these "the product of divine revelation". Once again this is a misrepresentation, a mere exercise in fixing Vedic concepts in the mould of the Western-Christian understanding of divine revelation. The fact that the whole of Vedic literature was preserved orally is a phenomenon which amazes modern minds and causes these 'scholars' to insist that early manuscripts must have existed as an aid to memory. Yet even today the Vedic mantras are recited with subtleties of intonation and rhythm that have been handed down from generation to generation for centuries.

The worst form of distortion is seen in the treatment of the *Brahmanas*, the prose commentaries attached to the *Vedas*. Western 'experts' interpret these as explaining the "significance of the Vedas as used in the ritual sacrifices and the symbolic import of the priests' actions." The *Brahmanas*, they say, "present a digest of accumulated teachings, illustrated by myth and legend, on various matters of ritual and on hidden meanings of the sacred texts. Their principal concern is with the sacrifice, and they are the oldest extant sources for the history of Indian ritual."[314] (In fact, the *Brahmanas* contain details of the experimentation and application of the fundamental theories of the *Vedas*, as explained in the chapter entitled "Veda Vijnana: Applications and Experiments".)

The *Vedas* were articulated as mantras by seer-scientists endowed with deep insights and powerful intuition. As the meaning of the mantras were unravelled, these rishis visualised the nature of the universe. The mantras were revealed to them, and they had a clear perception of the ideas they contained. In this instance, 'revelation' is akin to the phenomenon of Newton's 'discovery' of the law of gravity by witnessing the fall of an apple. The mantras spontaneously poured out of the hearts of the seer-scientists and became known by different designations. However, the entirety of their knowledge is encapsulated within the term 'mantra'; its meaning is 'sound', and sound reverberates in everything in this universe.

Sound has enormous power; it has the power to create an entire universe. The *Upanishads* state that in the beginning there was sound, and everything came into existence from that sound. Even modern scientists are beginning to recognise that a vibration reverberates ceaselessly throughout the cosmos, underlying all matter and forming the substratum of everything. Just as it pulsates within all objects in the universe, it also pulsates within us. We can discover that inner pulsation throbbing at the root of the mind.

Sound manifests as speech in everyday life, at four levels. Most people associate speech with its grossest level only, the level of articulated speech known as *vaikharee*. However, gross speech arises from a subtler level, *madhyama*, which is experienced in the throat. Beneath this subtle level is a still deeper level called *pashyanti*, which is experienced in the heart. The origin of sound lies deeper still, in the transcendental level of speech which is experienced in the region of the navel and is called *paravani*. Mantra has the power to penetrate through these gross and subtle levels of sound, erasing our sense of difference and carrying us back to its source.

The rishis or seer-scientists transmitted mantras from guru to disciple, from teacher to student, from mentor to seeker, orally. This is described as *shruti parampara*, the tradition based on learning by listening to the discourses and exposition from the teacher. This tradition has continued for hundreds and thousands of years up to today, albeit in a considerably lesser manner these days. To prevent the mantras from fading into oblivion, it would have been deemed necessary a few thousand years ago to compile all the then available mantras in the form of collections. According to the Puranic tradition, Krishna Dvaipayana was known as the famous Veda Vyasa who initially compiled all the mantras in the form of four *Samhitas*, namely the *Rigveda Samhita*, the *Yajurveda Samhita*, the *Samaveda Samhita* and the *Atharvaveda Samhita*, which are collections of the mantras of the *Riks*, *Yajus*, *Samans* and *Atharvans* respectively.

Over the course of time, changes occurred in the mode of pronunciation and the number of sequences of the mantras, bringing into existence 1131 recensions — 21 recensions of the *Rik Veda*, 101 recensions of the *Yajur Veda*, 1000 recensions of the *Sama Veda* and nine recensions of the *Atharva Veda*.

The word 'brahmana' is used for a particular class of literature composed in prose, which aims to provide expositions of the Vedic mantras and detailed accounts of their application in the real-life environment. Unfortunately, instead of understanding their significance as 'scientific' experiments, these have been challenged as ritualistic topics. The *Brahmanas* adopt the two methods of *vidhi* and *arthavada*. Vidhi is intended to reveal the implications of the mantras in various applications as well as the rules of conducting them; and arthavada is intended to stimulate people to perform vidhi with great zeal. Arthavada includes *hetu* (debate or reasoning), *nirvacana* (etymology), *ninda* (censure), *prasama* (recommendation), *samsaya* (controversy), *parakriya* (achievements of others), *purakapla* (performance of various acts in former times), *vyavadharana kalpana* (reaching a conclusion), and *upamana* (simile).

The *Brahmanas* connected with the *Yajur Veda* are found in two principal schools, the Krishna (black) and the Shukla (white). The chief characteristic of the old yaju texts is the constant intermingling of the formulae of application and the explanatory portions of the *Brahmanas*. The Puranic tradition points to 86 subdivisions of the Krishna school and 15 subdivisions of the Shukla school. However, to date only four subdivisions of the former (*Tatteriya*, *Maitrayani*, *Kathaka* and *Katha Kapisthala*) and two of the latter (*Madhyandina* and *Kanva*) have come to light. Madhyandina and Kanva are collectively known as *Vajasaneyins*, their origin being ascribed to Yanjnavalkya Vajasaneya.

Both recensions of the *Brahmana* of the Vajasaneyins bear the name 'Shatpatha' — 'the Brahmana of 100 paths'. Yet the Shatpatha of the Madhyandina has just 100 *adhyayas* (chapters) while the Kanva has 104 chapters. The Madhyandina text of the *Shatpatha Brahmana* is divided into 14 *Kandas*, each having

a specific designation on the basis of treatment of the subject, or the number of the chapters therein.

Shatpatha Brahmana occupies a place of prominence in *Brahmana* literature by virtue of its systematic treatment of applications and experiments and its provision of highly relevant and practical information.

Tasmadwa etasmad atmana akasha sambhutad
Akashad wayuh. Wayuh agnih. Agnir apah.
Adbhyah prithwi.
Prithwya oshadhyah. Oshadhi bhya annam. Anna purusha
Sa wa purusho anna rasamya. Tasyedemewa shirah
Ayam dakshina pakshah. Ayam uttar prakashah.
Ayam atma.
Idam purchha pratishtha.

TATTERIYA UPANISHAD 2:1:1

Space emanates from Brahma. Air circulates in space. Agni (fire) flares in air. Apa (water) is generated from that. Prithwi (earth) springs from apa. *Aushadhayah* (vegetation) grows from earth. Anna (consumables/food) is produced from vegetation. Purusha (the individual) emerges from anna (consumables). Of purusha (the seer-scientists point out) this indeed is the head, this is the right side and this is the left side. This is the tail (where supraphysical energies are stabilised). This is the atma.

Veda and the Material Sciences

TRADITIONAL SCHOLARS OF THE *VEDAS*, WHO hold these texts in great reverence, strongly disapprove of any attempt to bring to light the presence of 'scientific' knowledge in these texts. They think that such efforts undermine their sacredness. This erroneous impression flows from confusion about veda, the fundamental tattwa which goes into the creation of every individual in the cosmos, and the texts which describe, define and seek to explain these tattwas. Once this basic difference between the two connotations of the term 'veda' is understood, it becomes possible to comprehend the significance of the statement that all that has occurred in the past, all that is here in the present and all that will be created in the future emanate from veda.

The Vedic texts enumerate principles which regulate the operation of the cosmos. These texts discuss such profound questions as how this universe came into being, as well as such mundane questions as what is wholesome and nourishing food and what type of food makes a person indolent, lazy or confused. They examine how to keep your body fit and flexible, how to achieve mental peace and how to have a sharp and incisive intellect. These questions are as relevant for our world and its people as the determination of the movement of the stars and planets, the planning of towns, predicting the

weather, laying down principles of administration, organising policy and engineering a harmonious society.

All of these are covered under the term 'science', which has come to include social sciences. An insight into them does not detract from their sacredness but strengthens the conviction of their profound significance. We should not shy away, therefore, from communicating these profound principles in an idiom that the modern mind will be able to comprehend — although it is totally unnecessary to try to 'prove' them on the touchstone of modern science, which is already reaching its limits.

In fact, modern sciences in essence are material sciences. The Vedic concept of science extends beyond this, encompassing knowledge of the material, the physical and the supraphysical domains. To discuss these sciences in detail is beyond the scope of this work. However, a brief exposition of the manner in which the seer-scientists deal with these subjects will give readers some flavour of the way they deal with the material sciences. We use the term 'material science' for the Sanskrit term *bhautik vijnana*; that is, the sciences dealing with bhoota, which means 'matter'.

Material sciences are sectional or partial, in the sense that each discipline deals with a specific aspect of matter. Physics, chemistry, biology, astronomy and so forth are all sectional sciences. In the Vedic lexicon, the term *padartha vijnana* is a grand science which incorporates all sectional sciences. It is difficult to find an appropriate English equivalent for the term padartha; its etymological meaning is 'a thing having a name'. *Artha* is a thing to which the senses travel, any object comprehended by the senses; and padartha means any object which is nameable. A thing cannot be known unless it has a name and, therefore, knowability and nameability have the same import and define padartha. Several commentaries on

philosophy have rendered padartha as 'category' which, although somewhat inaccurate, is nevertheless convenient and useful. However, the definition of padartha in the context of sciences and philosophy is different; we shall use the term 'substance' for padartha.

There are three types of substances: *ghana* (solid), *drava* (liquid) and *vashpa* (gaseous). A substance is solid when the particles of which it comprises are inexorably intertwined. These particles are linked together by strong bonds into a firm structure. Earth is solid, whereas particles are loosely linked in a liquid. Consequently, liquid changes its form in accordance with the container in which it is stored, even though its volume does not change. Substances whose particles are so loosely linked that both their volume and form alter quickly fall into the third category — air and light are examples of this class of substance.

All padarthas comprise entities called balas,[315] and the properties in every padartha are of three types — stable, unstable and relative. These properties are found to varying degrees in different padarthas. All inherent properties are normally stable in all three classes of substance, while imported properties are unstable, and the properties which influence and regulate other substances are relative.

The inherent properties in all three kinds of substance which remain unchanged in different states of the substance are stable. Properties which bring about change and differentiation in the substance in its different states are unstable. And finally, properties which bring about fusion and diffusion because of contact or interaction with another substance are relative properties.

Stable properties have 10 classifications: weight, dimension, severality, disjunction, organisation, stabilisation, elasticity, dependence, inertia and indestructibility. Weight is

a common property of all substances. Some scientists are of the view that heat, elasticity and so on are not substances because they do not have weight. But if these entities are broken down to their basic component, we will find entities that have weight. Therefore, those substances should be considered as 'padarthas'.

Every visible thing is composed of parts. In order to be visible, a thing must have three dimensions — length, height and breadth — because it is a series of lines placed sideways. A mathematical point, on the other hand, has no dimension and therefore can never be perceived. Speaking frankly, it is really nothing but a notion. Dimension is the cause of the common usage of measurement. It resides in all substances and is of four kinds: minuteness, largeness, length and shortness. Atoms are also discussed in the *Upanishads* as having the attribute of dimension. By blending or bringing together two, three or more atoms, an increase in their dimension becomes discernible.

Prithakatva (severality) is a property which brings about a conflict between a substance that is occupying a location and another substance that seeks to occupy that same place. The substance occupying a place must be removed if another substance is to be located there. This property is common to all substances. If we dip our hand into a container full of water, some water will spill over. However, the water does not overflow when salt or sugar is added to it, because particles of a liquid are loosely linked and freely flow here and there. There are 'holes' or tiny spaces between these particles in which these additives find a place.

According to Vedic principles, padarthas such as prana, apa, wayu and soma occupy space, although their material offshoots like agni, heat, light, the breath and so on may not occupy space. The essence of severality is to be incompatible, and it is of two types — spatial and conceptual. We have just

discussed spatial severality. The differences which arise because of name, form and function are conceptual, and thus every padartha is different from others because of the differences in their name, form and function. This is 'conceptual' severality.

Substances have the property of *vibhajyata* (disjunction), this being the opposite of conjunction which signifies the contact of two things. Disjunction denotes the state of being separate and indicates the state which immediately results from the act of separation. There are several parts in an individual, and separation becomes possible because of the property of separateness which inheres in the parts. The property of disjunction makes it possible to cut an object into several pieces, or divides substances into several components. Proponents of the Vaisheshika school regard atoms as indivisible, yet these can also be divided into separate components by the use of special instruments or technology. Scientists assert that even if an object has been cut into several parts, one should not assume that these cannot be subdivided into further smaller components.

All substances which have a mass, and even those which do not, have *randhras* (tiny holes) in them. There are also holes in fine and ultra-fine substances. Even if a solid is totally opaque, one cannot say that there are no holes in it. If an iron bar is heated at one end, the other end also becomes hot, because air penetrates every object. These randhras (holes) are of two types — those which are discernible by the eyes and those which are discernible by mechanical or technological aids. Sometimes we have to rely on our imagination to discern the existence of these holes. These holes vest each substance with the quality of stabilisation.

The other common property in a padartha is elasticity, namely the trait to expand or shrink. This property resides

in all objects, in some form and to varying degrees. It exists in very small measure in liquid substances. Liquid may occupy more space or less; but it lacks elasticity. This property is noticeable in solids, and rubber is the most vivid example. Even in solids like gold and silver the property can be discerned, such as when a goldsmith successfully beats the metal to make an ornament like a ring or a necklace. The particles are organised in the form of a substance by the application of the property of attraction and repulsion.

Every substance also possesses a property which enables us to keep it in its shape, and to reduce or increase its dimension. This property enables us to bend a piece of bamboo, to keep it in that state, and to bring it back to its original state. Substances which contain air are transformed into liquid by that property which vests in it as a specific bala: when that bala is removed, the substance assumes its original form. For example, the branches of a tree can be bent by the application of force and, when that force is removed, regain their earlier position.

Substances also possess the properties of inertia and dependence. Inanimate objects cannot move to another location on their own. When on the move, they cannot stop on their own. They also cannot change form on their own. This inertia is offset only by motion which is caused by *baladesh* (the application of force). Thus this application of force brings about motion as well as stability.

Every substance also has an inherent property of indestructibility, in the sense that something which exists can never be completely destroyed (although it can change form), and that which does not exist at all cannot come into existence.[316] People who have insight into tattwa are able to discern this.

These stable properties commonly reside in all substances. Unstable properties are temporary. For example, heat, coldness, shrinking, expansion, hardness, softness,

colour and form are all unstable and therefore temporary properties. Air can be hot or cold; the body grows and expands; clouds and smoke are transitory; water gains solidity when it becomes ice; the embers of a fire can be black or red and sometimes white; hair can be red, yellow or black; a piece of gold can acquire different dimensions; camphor can be seen in solid, liquid or vaporous states. Some stable properties also are sometimes present and sometimes absent in substances.

Savyapeksha (relative properties) include movement, attraction and repulsion. The seer-scientists have analysed the balas which generate these properties in great detail. For example, there are six aspects of the property of motion of various types of bala which generate movement. A change of location is the reflection of the bala of motion. An object is in motion when it moves from one location and establishes contact with another without losing its identity. No object is able to move on its own, to stop on its own or to carry another object on its own. An object continues to move at the same speed until a bala known as *nodana bala* does not intervene. The location where the bala is applied is the source of that energy, like a 'womb' from where that energy emanates. The direction in which it is blocked and the direction in which nodana is applied determine the direction in which the object moves. When the operation of that bala ceases, the moving object comes to a halt.

The degree of this bala applied at the source determines the evenness or otherwise of the distribution of force in the object. For example, a person running on an uneven surface falters, tends to fall and may be able to regain her or his balance. This is determined by the manner of distribution of this energy in the body. Sometimes a person running ahead falls backwards, which is caused by the uneven distribution of that specific bala (force) in the body.

Two units of bala become intertwined when they operate in the same direction. As motion is generated by one bala, the contribution of the other is not noticed. For as long as the speedier bala maintains its dominance, the other will remain subdued and behave as if it is a part of the pre-eminent bala. Uniformity or fluctuation in movements are caused by the presence of these balas in varying degrees. The operation of these balas also explains the cause of circular motion and the behaviour of two objects moving towards each other from opposite directions.

Attraction is another type of bala which is included in the category of the relative properties inherent in a padartha. According to the seer-scientists, attraction is governed by the following three laws:

1. All objects attract others while they remain in their own places.
2. If one object remains unchanged, the quantum of attraction varies according to the density of the objects.
3. When the density and dimensions remain the same, the quantum of attraction is determined by distance.

These principles cover what modern material science would regard as the domain of physics. From the viewpoint of another sectional science, substances are of three types: *roodha, yogaroodha* and *yaugik*. Substances in the first of these categories are akin to what modern science describes as elements, namely that which cannot be broken down into other substances. Substances made by the fusion of two or more elements are yogaroodha; these are in the nature of a compound such as water. Substances in the third category are those which are made by the blending of separate substances, without discarding their original character during that process.

The seer-scientists consider prithwi (the earth), jala (water), teja (the sun), wayu (air) and akasha (space) to be the five basic tattwas. We have discussed these five gross material elements separately. A considerable amount of information is available in the ancient texts on processes which belong to the field of chemistry. The chemical processes of filtration, solution, crystallisation, distillation and sublimation have been explained therein in great detail.

The Vedic texts also cover several other theoretical and applied sciences. These include astronomy, which has many applications in daily life, including astrology and astronomical predictions.[317] The nakshatras (lunar mansions) play a prominent role in the Vedic science of astronomy and astrology. Looking up at the stars in the night sky, what is the simplest way to determine the zodiac — the path through which the sun, moon or planets travel? It is obviously by watching the path of the moon, which is both the brightest and fastest-moving of the heavenly bodies. *Atharva Veda* abounds with references to the nakshatras.[318]

No planetary motion approximates a 12-fold division of the zodiac.[319] The 12 months of the year, upon which the idea is based, require long-term observation. The simplest zodiacal division would be relative to the daily motion of the moon, because the moon's movement on a daily basis is the most evident planetary motion and can be easily observed. This zodiacal division has 27 parts, which are determined by watching the position of the moon on consecutive nights.

The moon takes approximately 27 days to circle the zodiac, following an average daily motion of slightly over 13 degrees. Sometimes, however, the number 28 is used because the moon's period of circling the zodiac is slightly more than 27 days (actually 27.3). Such observation is the basis of the 27 or 28 nakshatras, or lunar mansions, of Vedic astrology. This

nakshatra system remains the pillar on which this system of astrology is based, and serves to uphold its many insights and great predictive power.

In the history of ideas, therefore, one could argue that a lunar zodiac of nakshatras would precede one of the 12 signs which would be more solar in nature. It was probably only after discovering such a lunar zodiac that a solar zodiac would have become necessary, as an additional refinement to deal with the season and the year. The lunar zodiac, therefore, contains the origins of astronomy and astrology.

The root *naksh* behind the term 'nakshatra' means to approach, worship or attain, while *tra* is a suffix suggesting instrumentality. The nakshatras were defined originally as means of connecting with the cosmic powers and extending our human mind to the cosmic mind. The term 'nakshatra' is commonly mentioned in *Rik Veda*, where the names of several nakshatras, such as *tishya* (*pushya*), *ashwini* and *revati* are given, although this *Veda* does not contain a complete listing.

A complete listing of the nakshatras occurs in *Yajur Veda* (*Tatteriya Samhita* 4:4:10) and in *Arthava Veda* (19:7). Both lists begin with *krittika* (the Pleiades). *Atharva Veda* (19:7:2) places the *ayana* or solstice in *magha* (Regulus or early Leo), reflecting a date of before 2000 BCE, and also mentions the planets and *rahu* (19:9:10).

The list of nakshatras is given below:

1.	*ashwini*	0° – 13°20' Aries
2.	*bharani*	13°20' – 26°40' Aries
3.	*krittika*	26°40' – 10°00' Taurus
4.	*rohini*	10°00' – 23°20' Taurus
5.	*mrigashira*	23°20' Taurus – 6°40' Gemini
6.	*ardra*	6°40' – 20°00' Gemini

7.	*punarvasu*	20°00' Gemini – 3°20' Cancer
8.	*pshya*	3°20' – 16°40' Cancer
9.	*ashlesha*	16°40' – 30°00' Cancer
10.	*magha*	0°00' – 13°20' Leo
11.	*poorva phalguni*	13°20' – 26°40' Leo
12.	*uttara phalguni*	26°40' Leo – 10°00' Virgo
13.	*hasta*	10°00' – 23°20' Virgo
14.	*chitra*	23°20' Virgo – 6°40' Libra
15.	*swati*	6°40' – 20°00' Libra
16.	*vishaka*	20°00' Libra – 3°20' Scorpio
17.	*anuradha*	3°20' – 16°40' Scorpio
18.	*jyeshtha*	16°40' – 30°00' Scorpio
19.	*mula*	0°00' – 13°20' Sagittarius
20.	*poova ashadha*	13°20' – 26°40' Sagittarius
21.	*uttara ashadha*	26°40' Sagittarius – 10°00' Capricorn
22.	*shravana*	10°00' – 23°20' Capricorn
23.	*dhanishtha* Aquarius	23°20 Capricorn – 6°40'
24.	*shatabhisha*	6°40' – 20°00' Aquarius
25.	*poorva bhadrapada*	20°00' Aquarius – 3°20' Pisces
26.	*uttara bhadrapada*	3°20' – 16°40' Pisces
27.	*revati*	16°40' – 30°00' Pisces

Although the nakshatras are primarily defined relative to the moon, they are used relative to the sun and all the other planets as well. The term 'nakshatra', therefore, also refers to the sun, moon and planets, or the main heavenly lights. In this regard, the *Vedas* speak of 33 nakshatras or of 34 or 35 lights (the 27 or 28 nakshatras and seven planets). The comets are also members of the solar system; there is a reference to the comet *dhoomaketu* in *Rik Veda*.[320]

While the *rashis* (signs of the zodiac which are a certain sum or quantity of degrees) reflect a 'mass' or 'heap' of the 12 signs, the nakshatras further divide the constellations into 27 segments of equal length. Each nakshatra is 13°20' in duration. Multiplying this length by 27 equals the entire zodiacal belt of 360°. Each nakshatra is male or female, as well as sattva, rajas or tamas in nature. The following table lists the planets referred to in the various Vedic texts.

Planets at a Glance

Sun	(soorya)	Leo
Moon,	(chandra)	Cancer
Mercury	(*budha*)	Gemini – Virgo
Venus	(*shukra*)	Taurus – Libra
Mars	(*mangala*)	Aries – Scorpio
Jupiter	(guru)	Sagittarius – Pisces
Saturn	(*shani*)	Aquarius – Capricorn
Rahu	(N. Node)	Taurus
Ketu	(S. Node)	Scorpio

There are several references to the divisions of time, including the year and the additional (13th) month.

AYURVEDA: THE SCIENCE OF LIVING

Ayurveda is another important applied science of living, longevity and health care.[321] According to ayurveda, our biological existence is a dance of the three *doshas* of *vata*, *pitta* and *kapha*. Life is a multicoloured tapestry of their movement in various plays of balance and imbalance, coming together and drifting apart. These three powers colour and determine our

conditions of growth and aging, health and disease. 'Dosha' means a fault or a blemish and indicates the factors which bring about disease and decay. The doshas create three different primary types of individual constitutions, or mind-body types, and an imbalance in the doshas gives rise to various ailments.

Vata, which literally means 'wind', is the primary dosha or biological force. It is the motivating power behind the other two doshas, which are lame or incapable of movement without it. Vata is primarily ether in substance and air in motion. It exists as the air that we hold in the empty spaces of the body, such as in the hollow organs, joints and bone cavities, particularly in the hips and lower back. On an inner level, vata is both the life-force and the energy of thought that moves in the space of the mind.

Yet vata is not separate from the other doshas. Like the wind that moves with the clouds in the sky, vata contains within itself subtle particles of water and the potential of fire in the form of electric force. Changes in temperature (fire) and pressure (water) make the wind.

Pitta means 'the power of digestion or cooking' — that which causes things to ripen and mature. As fire cannot exist directly in the body, pitta exists in the body in the medium of oily and acidic secretions and so is said to contain an aspect of water as well. Pitta is responsible for all forms of digestion and transformation in the body, from the cellular level to the workings of the gastrointestinal tract. Pitta governs digestion on mental and spiritual levels as well — our capacity to digest impressions, emotions and ideas in order to arrive at a perception of truth. Pitta endows us with positive traits of intelligence, courage and vitality; without it, we lack the decisiveness or motivation to accomplish our goals.

Pitta depends upon vata for its movement and on kapha for its support, just as fire requires both oxygen (air) and fuel

in order to burn properly. Kapha, which also indicates mucus or phlegm, means 'that which makes things stick together' and refers to the power of cohesion. Kapha serves as the bodily container for pitta and vata, or energy and heat. Kapha itself, as water, is held in the medium of earth, the skin and mucous linings, affording it a secondary earth element as well. Kapha depends upon vata for its stimulation and movement, and requires pitta for its warmth. Kapha is a special form of water in the body, in which pitta (heat) and vata (vital energy) are contained. Water which is cold or does not move cannot sustain life.

Hymns in the *Atharva Veda* are devoted to medical subjects, in which some of the outstanding topics such as fever, consumption, various wounds, leprosy and poisoning are mentioned. The later sages conducted research into the eight branches and three fundamentals of ayurveda on the basis of these hymns as the foundation. They include the following verses:

Atharva Veda 6, 7, and 6, 57 are full of references to diseases which are curable through the various uses of water and vaporisation. *Atharva Veda* 1,4, 1,5 and 1,6 have copious references to water therapy, declaring the efficacy of water in so many words.

References to the treatment of diseases of the heart, kidneys, liver and so on by means of the sun's rays are found in *Atharva Veda* 1, 22 and 6, 83. In 9, 8 it is mentioned that the rays of the sun absorb the toxic elements of the body, which explains the sun's effectiveness in curing disease.

Atharva Veda 5, 22 mentions three types of fevers and their cure. These are the fevers which 1. occur daily; 2. occur every third day; and 3. occur on the fourth day. Apart from these, there are references to seasonal fevers: the fever which occurs during the summer season on account of excessive heat; the

fever which occurs during the winter monsoons; the fever which occurs during the rainy season; the malarial fever which is accompanied by fits of shivering; the fever which occurs due to dryness; and the fever which arises on account of phlegm and fever accompanied by bronchitis. *Atharva Veda* 5, 22 (verses 6,7 and 12) also mentions the classes of people who suffer from attacks of fever.[322]

VEDIC MATHEMATICS

In addition to the four *Vedas* with which we are familiar, there are four *upvedas* (subsidiary *Vedas*). These include ayurveda, *gandharva veda*, *dhanur veda* and *sthapatya veda*. "In this list, the upveda of sthapatya or engineering comprises all kinds of architectural and structural human endeavour and all visual arts."[323] The book of Vedic mathematics lists 16 sutras (aphorisms) which form a *parishishta* (appendix) to *Atharva Veda*. Arithmetical problems usually solved by 18, 28 or 42 steps in cases of such vulgar fractions as 1/19,1/29 and 1/49 are solved by these formulae in one simple line.

Vedic mathematics "follows from the fundamental premises that the universe we live in must have a basic mathematical structure, and consequentially, to know a fact or obtain a result herein, to any required degree of precision, one must obey the rules of mathematical measure and relations."[324] These sutras cover arithmetical computations, multiplication, compound multiplication, division by *nikhilam* and *paravartya* methods, argumental division, factorisation of simple as well as hard quadratics, factorisation of cubic, the highest common factor, simple equations, the merger type of easy simple equations, complex mergers, quadratic equations, cubic equations, simultaneous quadratic equations, factorisation and differential calculus, partial fractions,

integration by partial fractions, divisibility by simple as well as complex osculators, squaring, square roots, cube roots and analytical conics. We also come across references to geometry in the Vedic texts, in which concepts of circumference, the triangle and so forth have been examined and explained.

The Vedic texts deal with a wide range of sciences, including social sciences. The seer-scientists have also investigated the phenomenon of gravity, magnetism, light and heat. The term 'vidyuta' as used in the *Vedas* has been translated as 'electricity'. It appears, however, that vidyuta is a more comprehensive term of which electrical phenomena form a part. Similarly, we find discussion of the rotation of the earth, the cultivation of herbs, the science of conception and care of the foetus, and meteorology with a particular reference to rains.

We are not seeking here to 'prove' that humankind has broken no new ground over the past few thousand years. This chapter merely seeks to highlight the importance of discovering the vast untapped sources of knowledge contained within the *Vedas*. These include a profound knowledge of material sciences and their application for human well-being. The ignorance, misinterpretation and arrogance of 'modern' experts have deprived our generation — most particularly the genuine students of science — from pointers which could open up new vistas of knowledge.

Agni wayu ravibhyastu trayam brahma sanatana
Dudoh yajnya sidhyantham rik-yajurh-sam lakshanam

MANUSMRITI 1:23

Agni, wayu and aditya are the three fundamental factors of creation. These have come into being through a process of interface and interaction of rik, yaju and sama (and are indicative of these three basic tattwas).

Causes and Effects in the Universe

Reflections on Ishwara and Parmeshwara

THIS UNIVERSE EVOLVES FROM, IS SUSTAINED IN, and ultimately dissolves into Ishwara and thus Ishwara is defined as the cause of this universe. It is rather like a tree which grows from the earth, is sustained on the earth and is ultimately subsumed in the earth. As the origin, support and ultimate denouement of the universe, Ishwara creates it according to its own will. It is all-powerful and all-knowing.[325]

Before reflecting on Ishwara and Parmeshwara, it may be helpful to explain the relationship between cause and effect in darshana, in which the material or inherent cause and the indirect or non-inherent cause in our universe are considered to be distinct from each other. According to the Nyaya school of philosophers, there are several types of cause in every creation. Firstly, there is what is called *samavayi karana* (the 'inherent cause'), whereby a substance is the inherent cause in the production of its qualities and motions, since the effects are inherent in the substance. When a pot is produced from earth or a cloth from threads, the earth and the threads are the inherent causes of the pot and the cloth respectively. This is so because the latter, as the effects, are inherent in the earth and the threads. It is important to recognise that this school does not hold that the earth or the threads are the material of which the pot and the cloth are composed. (In contrast, the

influential Samkhya school of darshana recognises a 'material cause', which in these examples would be the earth and the threads.)

A second variety of cause is known simply as *asamavayi karana* (the 'non-inherent cause'). An 'individual' in which the effect is not inherent but which is 'closely related' to the inherent cause may function as a non-inherent cause. For example, in the production of a pot from earth, the contact between the earth inherent in the pot is the non-inherent cause of the pot. The colour of the threads, which is inherent in the threads in a piece of woven cloth, is the non-inherent cause of the colour of the cloth. These examples make it clear that the 'close relation' of non-inherent effect to inherent cause is a matter of degree.

The third variety of causal factor is the crucial one in many ways. It is known as *nimitta karana* (the 'instrumental cause'), and includes all other causal factors not included in the first two varieties of causes. In producing a pot from earth, the following must be included in this category of instrumental cause: the presence of a potter at the appropriate time and place; the absence of any obstructions to the completion of the task; and the specific movements of hands and sticks.

This is further subdivided into two categories: a) general instrumental factors, such as the presence of time and place, and the absence of obstructions; and b) specific instrumental factors, including the particular movements of the potter's hands and sticks as well as any qualities which are specific to just this kind of effect, such as numbers in counting, size in measuring and so on.

The most effective cause is the supreme cause. This is the event which immediately precedes and brings about the production of the effect. (This is sometimes known as the 'operation'.) Thus, in chopping down a tree the last contact

of the axe with the tree before the tree begins to fall may be considered the causal condition *par excellence*. In this interpretation, the condition of the tree beginning to fall is an event. A second view holds that the honour of being called the supreme cause can only properly be awarded to the whole collection of causal conditions — the sufficient condition itself. A third view is that the principal cause is not the event which immediately precedes the production of the effect, but rather the 'individual' whose operation constitutes that event. Thus, in our example the axe is the cause par excellence.

Samkhya conceives of causality as a connection between a cause — which contains the effect in a potential state — and the effect, which is the same thing now 'manifested', ie. it has become apparent to us. Favourite examples are the oil of the sesame seed, first contained within the seed and then spilled out when the seed is broken open; and the production of curds from milk. In both cases the effect is contained in the cause. Samkhya generalises this conception of causation to refer to the relation between prakriti (unmanifest matter), which is the ultimate cause of all worldly effects, and its transformation into the manifest mental and physical modes with which we are acquainted in life.

Ishwara is both the material as well as the instrumental cause of creation. But this statement presents us with a problem. Earth is the inherent or material cause of the pot, but earth cannot make the pot on its own. Clearly, the maker of the pot is the potter who is, therefore, the instrumental cause of the pot. In the light of this law operating in the universe, which dictates that the material and instrumental causes are different, some may wonder how Ishwara can be both. Such a doubt is understandable. We need to remember that the law which dictates that material for the making of an object cannot at the same time be the maker of that object

is a law of *this* universe. Ishwara is different from the universe, whose laws do not apply to it.

Ishwara is comprised of the three fundamental tattwas of mana, prana and wak. To the extent that mana exists in it, Ishwara is all-knowing; to the extent that prana exists in it, Ishwara is all-powerful; and it makes the universe from the wak component, which can therefore be defined as the material or the inherent cause of this universe. However, the same Ishwara can be categorised as the indirect cause because of the prana portion in it, which means that wak is the material cause, prana is the incidental cause, and mana is the maker. Thus, we can see all three factors in the same Ishwara. We could view it in a similar way to the spider, which uses itself in making the web and is thus both the material and the maker of its web.

JEEVA, ISHWARA AND PARMESHWARA

Jeeva, Ishwara and Parmeshwara are all differing expressions of atma. Ishwara, as mentioned above, is a fusion of mana, prana and wak. Parmeshwara, the other atma, who is the repository of all knowledge, all strength and all matter, is devoid of any *nishkama* (desire or urge). However, since no creation is possible without the combination of *ichha* (this urge), tapa (concentrated endeavour) and *shrama* (labour), Parmeshwara cannot be said to create this universe nor be its cause. Yet, since whatever jeeva or Ishwara does is attributed to Parmeshwara, the cause of their activity is traced to Parmeshwara.

We have noted earlier that jeeva, Ishwara and Parmeshwara are differing expressions of atma. Since they are different dispositions of one and the same factor, there is no question of locating them in different 'compartments'. But human

ingenuity is such that it seeks to isolate different aspects of the same factor in order to understand or analyse them, at least as an intellectual exercise. As a theoretical intellectual exercise, therefore, one could attempt to understand and explain these three separately. If we look at Parmeshwara in isolation, as it were, devoid of jeeva and Ishwara, then we can say that it is not the cause of the other two.[326] The totality of mana, prana and wak found in jeeva and Ishwara is called Parmeshwara and constitutes all that exists in the universe. Parmeshwara is never devoid of jeeva or Ishwara; even when Ishwara is 'destroyed' because of jeeva, another Ishwara is immediately born, so that Parmeshwara is always filled with Ishwara.

The destruction of an Ishwara is known as pralaya,[327] and when this occurs Ishwara goes to sleep. In other words, all the activities of the tattwas in one of the universes cease. This is the smaller pralaya.[328] We say that Ishwara is destroyed when the tattwas themselves are destroyed. The difference between the two needs to be clearly understood. When an activity ceases to operate or a faculty stops working, it does not mean that the capacity to perform that function is destroyed. For example, if we observe silence for a period of time this does not mean that our faculty of speech is destroyed. It has merely ceased temporarily. Similarly, our organs continue to exist while we are asleep; it is just that their activity ceases during the period of sleep.

In contrast, permanent loss of speech occurs when there is irrevocable damage to the tongue; and blindness is the result of serious disease or injury in the eyes. Of course, the organs themselves are destroyed when death takes place. The cessation of the activities of the tattwas in the universe should be understood as the sleep of Ishwara, while the destruction of the tattwas themselves is the 'death' of Ishwara.

According to the *Vedas*, Ishwara is that from which all created substances or entities are born and in which all are finally subsumed and become unmanifest. Parmeshwara is that from which these Ishwaras emerge and into which they are finally subsumed; as such, it is the repository of Ishwaras. It is stated in the *Geeta* that Parmeshwara has 12 qualities in its relationship with the universe.[329]

'I', the Self, is the jeeva. This jeeva is the atma which evolves from Ishwara and is a small portion of it. In that sense, jeeva should be understood as Ishwara. In the same manner, Ishwara evolves from and is a small portion of Parmeshwara and can therefore be perceived as Parmeshwara. In this fundamental sense the entire cosmos, the jeevas and Ishwaras are nothing but Parmeshwara.

The atma of the body is jeeva, the atma of the jeeva is Ishwara, and the atma of all the Ishwaras is Parmeshwara. Parmeshwara is the anga (source) from which other angas emanate. This relationship is like that of a body and its limbs, or an entity and its parts. We have mentioned earlier that Ishwara and Parmeshwara are varying expressions of atma. Therefore, Parmeshwara is also referred to as Paramatma, the supreme atma. We could say that Paramatma is the whole of which others are part.

The relationship between cause and effect is similar to that of atma and the body. Atma is the cause and body is the effect. An angi is the whole of which the angas are the parts, like a body and its limbs respectively. The angi is the atma of the anga. Jeeva is the atma of the individual. There are innumerable individuals in the universe and Ishwara is the atma of the jeevas. There are innumerable universes in the cosmos and, similarly, there are innumerable Ishwaras. Parmeshwara is the atma of all the Ishwaras, the source of all the sources. All are the limbs of Parmeshwara, who is the atma of all Ishwaras.

The 'I' or jeeva is an atma; we could look at this 'I' as the first atma. This 'I' is the centre of my individuality, the Ishwara present in the jeeva. In other words, Ishwara is present in me and is therefore my second atma. There is another atma within this Ishwara, which is present in the Jeeva, and this is Parmeshwara. Thus, the Parmeshwara is my third atma. Proceeding in the same manner, we find that Ishwara is an atma and the Parmeshwara present in it is also its atma. That Parmeshwara itself is atma, but possesses no other atma.

Parmeshwara is like a thread tying all others together, but is not itself tied to anything. Just as the 'bodies' of jeeva and Ishwara have defined contours, so there is an atma which is the 'owner' or 'master' of that area and which is known as kshetrajnatma. Since Parmeshwara is limitless and unconfined within any boundaries, none of the atmas in Ishwara or jeeva can be outside it. Jeeva and Ishwara have a fixed number of atmas, whereas those in Parmeshwara are innumerable.

Parmeshwara can be described as the repository of all atmas, the minutest of all atoms and particles and also the very largest of all. Black, white, green, yellow and indeed all colours are incorporated in it. It is ever-changing, even while completely stationary. All the contradictions in the universe are reconciled in it and co-exist in harmony.

We can also look at Parmeshwara from another perspective: all the manas, pranas and waks in the cosmos are its roopas (forms); all vedas, yajnyas and prajas are its shareers (bodies); and jeeva and Ishwara are its vittas (properties). Apart from these, the atma of Parmeshwara is invisible and formless, without attributes or properties, and thus 'unknowable' and 'indescribable'.

It is said by the seer-scientists that Parmeshwara has neither 'navel' nor 'body'. This expression seeks to convey the fact that Parmeshwara has neither a centre nor a structure, no beginning

and no end, no support and no base. It permeates equally in innumerable jeevas and innumerable Ishwaras. It is visualised mainly in two dispositions: in one it is tranquil and unitary, and in the second it is expansive and abundant. In its indivisible, unitary form it is utterly tranquil: a single atma. In its expansive state it is innumerable and the atma of all that exists.

THE EXPERIENCE OF ABUNDANCE

When the human mind seeks to comprehend the frontiers of Parmeshwara in either of these two dispositions, it is bewildered, being unable to locate them. So let us try to visualise what we mean by the 'expansive state' of Parmeshwara. This state of limitlessness has four aspects: limitless in the sense of direction, space, time and substance.

From a fixed point, if we look for Parmeshwara we find it in all directions — north and south, east and west, above and below. The capacity of the human mind is such that we cannot comprehend its totality, for in terms of direction Parmeshwara has no end. It is the closest to as well as the farthest from the fixed point at which we are positioned in our search for it. It is everywhere, unrestricted by location or space.

All creations are mere manifestations of Parmeshwara's abundance. The cosmos, the totality of all that is created, is also a creation. Because it is impossible to determine when this process of creation began and how long it will last, we tend to conclude that the universe has no beginning and no end. Therefore, Parmeshwara is also limitless in terms of time, as indeed it is in terms of substance. If we search for the largest of all substances, we will merely come up with a name for that substance rather than a true comprehension of it. At this point we come across a hierarchy of 'individuals', each of which is greater than the preceding 'individual'.

This relative greatness over the factor preceding it is known as *bhooma*. As we follow the hierarchy upwards, this law of relative greatness or superiority continues to operate. This is not a hierarchy of disparate 'individuals' existing autonomously in their own respective states in relation to each other, in order of superiority or inferiority; rather, it is a hierarchy in which what follows subsumes that which precedes it. In another sense, these are states of relative subtlety. As we peel off layer after layer we proceed from one level of subtlety to another, and the essence of the preceding level is incorporated in the subsequent subtle state. To reach the final state we must go through various phases of subtle states, experiencing them in their totality, until ultimately we find that all the states have merged into one another. Thus, when we reach the end of the scale we attain a state in which all the previous states have been incorporated and subsumed.

THE HIERARCHY OF SUBTLE STATES

The first such subtle state is that of *nama* (name). Whatever exists in the universe has a name, and therefore name has a crucial significance. Hence it is known as bhooma. But whenever we come across a name there must be something to which that particular name applies, and thus we find that a name is always accompanied by a 'substance'. As noted earlier, all substances emanate from wak, which is why we say that name is born of wak. Wak, being greater than name, then comes to occupy the position of greater significance and is bhooma.

The entirety of wak enters mana, making mana a step higher and subtler. But mana, the human mind, is moulded or shaped by *sankalpa* (resolve). This means that resolve comes to occupy a relatively higher position and is bhooma.

The process does not end there. Resolve arises from chitta (thought), and so chitta becomes bhooma. Thought is regulated and sharpened by *dhyana* (concentration), causing the faculty of concentration to be allotted a higher status on this scale. The seer-scientists tell us that concentration is made possible by vijnana, and so vijnana is bhooma. (We discuss the concept of vijnana elsewhere in this work. In brief, it is the process of knowing how one becomes many, the knowledge of unity transforming itself into limitless variety. Vijnana is the seat of all thought and the source of the intellect.)

Vijnana is in greater or smaller measure due to bala, the source of strength which enables a human mind to engage in the effort of thinking, apply the intellect and make decisions. Thus bala is located a step higher on the scale. This strength is nourished and sustained by the intake of anna (food), for strength would fail without sufficient food. So food is seen as more important than strength. But the food is produced by apa (water), making water relatively more important. And the availability of water (for the production of food grains) is regulated by teja (the sun); in the absence of the sun, the flow of water would cease. Therefore the sun becomes bhooma and is more important than the preceding 'individuals'.

The process of moving up the scale continues as we discover that the sun moves in the limitless akasha (sky). This sky, or space, becomes more important than the sun, but is itself permeated with prana (supraphysical energy), which means that prana is bhooma as compared to space. All entities in the universe evolve from prana and are its numerous variations. They assume the form of prana when they are destroyed. Since all matter is the manifestation of energy, in the ultimate analysis prana alone is the most important state on this scale of hierarchy. It is the true bhooma.

THE SEARCH FOR HAPPINESS

The purpose of life, according to the seer-scientists, is the search for satya (Truth). But Truth cannot be grasped without vijnana, which does not reveal itself without *mati* (intellectual application). Meaningful intellectual application is not possible without shraddha (faith and fervour), and faith cannot be sustained without *nishtha* (conviction). Conviction in its turn cannot be achieved without kriya (action).

Here the seer-scientists provide us with an extremely profound formulation. All actions in the world aim to achieve *sukha* (happiness). We are not motivated to undertake any action unless it promises to give us happiness. This makes happiness, which is the instigator of all actions, primary in the scheme of the entire universe. So happiness is bhooma.

Bhooma literally means 'addition', 'augmentation' or 'expansion'. We find that happiness results from our sense of gaining something new, something that we do not already possess. This is also bhooma. So growth, expansion or augmentation is happiness. The opposite is equally true. Decline, reduction or contraction all cause unhappiness.

A deeper observation of the fluctuations in human emotions reveals that we are overtaken by a sense of limitation and inadequacy whenever and wherever we see variety. The sense of variety or novelty arises from observing or noticing something which does not already exist in our lives. Limitation is thus a symptom of a feeling of inadequacy, or 'less than completeness', and this is the root of unhappiness.

Where there is no sensation of variety, this feeling of insufficiency does not affect us. Unity and harmony prevail in the absence of a sense of incompleteness. The differentiation between one object and another vanishes, and is replaced by a sense of limitlessness. In a real sense, this

experience of limitlessness is the pinnacle of the hierarchy. It is the state of supreme happiness, known as ananda (bliss). The seer-scientists tell us that in this state one realises that the whole universe is nothing but bliss. There is no cognition of different objects at this level. On acquiring jnana (true knowledge) all differentials disappear, and the perception of the underlying unity emerges. True knowledge enables one to see how, in the final analysis, variety becomes an indivisible, undifferentiated unity. Vijnana enables one to perceive how that same unity becomes limitless diversity, so that everything becomes vijnana. That which runs through vijnana as a continuous undercurrent of bliss is satta (existence). This is ananda or bliss. These three — satta, vijnana and ananda — are the greatest, subtlest and most important bhooma, which the seer-scientists call sat-chit-ananda. This is the real form of Parmeshwara, and it is how we experience it: in the form of existence, the knowledge of that existence, and the happiness which flows from that knowledge. In view of the subtlety and limitlessness of Parmeshwara, jeeva is not able to fully interface or intercede with it. Instead, jeeva achieves that goal by interceding with Ishwara. In a sense, this is the way in which jeeva pays homage to Parmeshwara.

All karmas (actions) are performed for jeeva and Ishwara, and Parmeshwara remains unaffected by them. But whatever actions a *sanyasi* (renunciate) or scholar performs — without desire for the fruits thereof — lead to emancipation. By those actions atma discards the state and functionality of jeeva and merges with Parmeshwara.

Why Bharatavarsha and not India?

WE HAVE DELIBERATELY CHOSEN NOT TO USE THE name 'India' for the land where the seer-scientists discovered the *Vedas* and developed several disciplines and branches of knowledge based on the sciences contained in those texts. This is because 'India' connotes one of the nation states of South Asia, carved out of the area that was under British domination and was partitioned to create the two states of India and Pakistan in 1947. The land is set off from the rest of Asia by the imposing northern mountain rampart of the Himalayas and by lesser adjoining mountain ranges to the west and east. Presently, India covers 1,222,559 square miles (3,166,414 square kilometres), just slightly more than two per cent of the earth's total land surface. Six countries and a long coastline border India's frontiers. However, at some point in the past all these countries (with the exception of China) were parts of a common cultural mosaic.

The land of the *Vedas* and the rishis extended much beyond the geographical area of present-day India. The absurdity of using this name becomes apparent from the simple fact that even my birthplace lies beyond the present political boundary, because I was born in Jhang which is now a district of Pakistan. However, this is not the main reason for discarding the use of the term 'India', as the rest of this chapter will reveal.

We use the name Bharatavarsha (the short form of which is Bharat) to designate the land of the seer-scientists. The word 'Bharat' is mentioned often in the *Rik Veda*, and several scholars believe that Bharat was a king and a hero. His descendants were known as *Bharata*s. Bharat is also mentioned in *Shatpatha Brahmana*, an integral component of the Vedic lexicon. Literally, 'shatpatha' means '100 ways' and, therefore, the term 'shatpatha brahmana' indicates 100 ways of discovering the reality of the cosmos and the process of creation. The *Shatpatha* texts explain and elaborate the application of the Vedic sciences and describe a variety of practical experiments which invoke the supraphysical energies, regulate their interplay and produce various entities comprising the cosmos.

Etymologically, the word 'bharata' stands for that which is related to Bharat, the person — that is, connected to the progenies of Bharat. The word *varsha* indicates a spatio-temporal extension. In the ancient tradition of the seer-scientists, space and time are viewed as interwoven and interlinked. Varsha thus indicates a region, and Bharatavarsha therefore indicates a region which is related to the progenies of Bharat.

Several legends are prevalent about the historical background of this specific region and its name Bharatavarsha, or Bharat. One explanation found in *Shatpatha Brahmana* suggests that it is named after Bharat, the brother of the legendary Rama. According to another version, the country is named after the elder son of Rishav Deva, who handed over his kingdom to this son, named Bharat, and went to the forest on a spiritual quest. Rishav Deva was "the first Jaina *tirthankar* and established the Jaina faith."[330] *Vishnu Purana* describes Bharata as the region bound in the north by the Himalayan mountain ranges and by the sea in the south.[331] References to Bharat are also found in other *Puranas*.[332]

We shall focus here on the context of this name as found in the *Vedas* and their allied texts. Pandit Motilal Shastri has described the region of Bharatavarsha in some detail in his commentary on some mantras of the Fourth *Kanda* (Book) of *Shatpatha Brahmana*. The geographical contours of Bharatavarsha emerging therefrom are likely to evoke, at first glance, a strong critical reaction from modern scholars. However, more evidence is now available to support the plausibility of this viewpoint. Whatever one's position, open-minded scholars should investigate these propositions carefully (using evaluations on the basis of available archaeological, historical and cultural evidence) and not simply discard them. Before we investigate these aspects, let us first briefly summarise the contours of Bharatavarsha as delineated by one of the greatest scholars of the *Vedas* of our age.

The *Vedas* comprise vijnana, yajnya, itihas and stotra. In other words, they enunciate the scientific principles, applications of these principles, historical episodes and homage to the supraphysical energies which are endowed with enormous creative power. The rishis, or seer-scientists, not only identified and discovered these forces but also developed techniques to harness them for the well-being of humankind. They 'discovered' the *Vedas* and organised life, society and polity according to the patterns of the interplay of the supraphysical forces operating in the cosmic domain. Each scientist who identified and discovered a specific supraphysical tattwa is known by that name.

As noted elsewhere in this volume, yajnya plays a significant role in the process of creation. Observers of Vedic cultural practices know of the performance of yajnyas as 'rituals' comprising the construction of a raised platform, igniting fire on it and making offerings of clarified butter and other items. They are not at all aware that the yajnyas here

on our planet have been organised to harness the supraphysical energies in accordance with the pattern of yajnya taking place in the cosmic order. At some point in time and in a remote place, such activity was in the charge of a group of people known as sadhyas. This was before society was organised into the four varnas, with brahmanas dedicating their lives to the study and exploration of the sciences of veda. The seer-scientists explored the cosmic domain and identified the numerous worlds which comprised these multiverses. They also located various regions in the universe and discovered their functions and their inter-relationship. They created regions on this earth which were parallel to the cosmic regions. And just as the supraphysical energies operating in the cosmos were known as devatas, so were a group of people — human beings — classified as 'devatas', because they had harnessed in their person the supraphysical energies operating in the cosmos.

The knowledge of yajnya was gained in Bharatavarsha from the devatas residing in a region known as swarga. These human devatas came into being after the end of the age of sadhya, and they discovered the science of performing yajnya which followed the yajnyas operating in the cosmic region. In other words, they replicated on this earth an operation which occurs in nature. Not only did they discover the science of yajnya, but they also established three regions — the triple world — according to the same pattern that exists in the cosmic order. In the cosmic realm, different devatas (or supraphysical energies) regulate different worlds, and the human devatas ran their affairs accordingly. In the cosmic order the fundamental supraphysical energy of prithwi (earth) is agni, the dominating supraphysical energy of akasha (space) is wayu and that of dyau (the solar system) is Indra. The human devatas discovered specific supraphysical energies,

harnessed them and endowed themselves with those powers, thus becoming known by the names of the respective supraphysical energies. These human devatas ruled the three regions on this planet.

What we have come to know as Bharatavarsha in recent times is half of its actual area. Before the partition of the country into India and Pakistan in 1947, Bharat's ('India's') boundary extended up to the Sindhu river. But that is not the historical boundary of Bharatavarsha in the Vedic times. According to evidence available in the *Vedas*, Bharatavarsha extends far beyond this and, for all practical purposes, Sindhu divides it in the middle. In the ancient texts the area from Sindh to the Red Sea in the west is known as Western Bharat and the area from Sindh to China is known as Eastern Bharat. This entire region was regarded as one country.

According to ancient accounts, the daughter of Rishi Rijashwa was widowed and subsequently gave birth to Zarathustra from her liaison with a man. In those times, re-marriage by a widow was considered a grave violation of prevailing social norms and thus her action was severely criticised by scholars and lawgivers. However, Zarathustra strongly opposed this view and defied their censure. In consequence, the society became divided between the supporters and opponents of Zarathustra, with the asuras on one side and the brahmanas on the other. Since the leader of a community or a group of people was known as 'Indra', Varuna was the Indra of the asuras and Devendra, the leader of the devatas, was the Indra of the brahmanas.

In this division of the world into various regions, Bharatavarsha was designated as 'prithwi' and its area extended from China to the Red Sea. Just as the dominant supraphysical energy of prithwi (or the earth) is agni in the cosmic order, likewise agni ruled Bharat — or prithwi, as it was called.

Because agni sustains and nourishes prithwi in the cosmic order, it came to be known as 'Bharat' ('one that sustains and nourishes'). Agni is the source of brahma veerya.[333] The ruler of prithwi loka was called 'agni' because he had harnessed the supraphysical energy bearing that name. Therefore, this region was called Bharatavarsha.

Manu was the emperor of Bharatavarsha and agni was his regent or viceroy, so to speak. Manu is known to modern scholars as a king, a political philosopher and a lawgiver. The name 'Manu', however, is mentioned in the *Rik Veda* and *Atharva Veda*, and also appears in *Tatteriya Samhita*, *Kathaka Samhita*, *Shatpatha Brahmana* and other works. Its meaning becomes clear only when we look at it in the specific context in which the seer-scientists use it. In *Manusmriti*, the well-known compendium of social and ethical customs and regulations, there is a mention of six manus, namely *swayambhuva, svarochis*, *uttama*, *tamas*, *raivata* and chaksus; while 14 manus are mentioned in the *Puranas*. As we have noted in *Before the Beginning and After the End*, these 14 manwantaras — or ages of Manu — refer to the division and organisation of time into different *yugas* or ages.

To return to the geographical order of the Vedic age, the region from the Himalayan Mountains to the Alpine ranges was known as antariksha loka (interspace), one of the three worlds created on earth. Following the pattern of the cosmic order, the ruler of this domain was called wayu devata. This was a picturesque region inhabited by unique species of flora and fauna and dotted with several huge forests.

The world from the Alps to the Mediterranean ocean was named swarga and its ruler enjoyed the title of Indra. Thus, the region from China to the Mediterranean sea was divided into the three regions of prithwi, antariksha and dyau, which were ruled by agni, wayu and Indra. There were three *vishtaps*

SECTION SIX

esha sarveshu bhooteshu goodho atma na
prakashate
drishyate tu agrayaya budhya sookshmaya
sookshmadarshibhih

KENA UPANISHAD: 1:3:12

It is hidden in all beings, and hence it does not manifest as Atma. But the seers of subtle things discern it by using a pointed and sharp intellect.

(districts) in swarga, each of which was under the control of Indra, Vishnu and Brahma respectively, and this entire arrangement was established by prajapati, a powerful person of his times. To recap, prajapati is the first individual in the process of creation, and the term 'prajapati' is one of the most significant employed by the seer-scientists for the supraphysical entities operating in the cosmos. Prajapati is the founder of the geographical arrangement and social order, and is also given the name swayambhoo prajapati.

Swayambhoo Manu, the chief of this triple world, lived in this region of Bharatavarsha. Because *isha* in Sanskrit means 'chief', 'master' or 'lord', this triple world came to be known as *asya*, a derivation of isha; later, asya became modified to 'Asia'. Swayambhoo Manu kept a small area of 'Asia' (Asia Minor) under his direct control, while the rest was distributed among agni, wayu and Indra. Swayambhoo Manu used to live in the Caucausan mountain ranges, which were the boundary of the *deva triloki* (the three regions of the devatas).

By carving out small parcels of land from all three regions, a massive yajnyashala — the place for performing yajnya — was built. This was the common property of all devatas and was known as *bradhnasya vishtap.* There were many enchanting places, including lakes and forests, in this opulent region. The place where yajnyashala was built was named *kurukshetra* (also known as *ritukshetra* or *yajnyakshetra*), and we can find frequent references to this Kurukshetra in *Shatpatha Brahmana.*[334] It was located at *akshansha* (48° latitude), and one of the five *saraswatis* or famous rivers flowed here. (One of these Saraswati rivers, which had disappeared underground, has recently been located by satellite imagery and archaeological findings. Its course has been discovered in the north-eastern part of Bharat, as we knew it in the first half of the 20th century.) Devatas used to perform yajnyas in this area and would then bathe in the

Saraswati river at the conclusion of the yajnya. The 'secrets' of the science of yajnya were preserved in *vijnana bhavan*, the 'house of sciences', and the knowledge of these sciences gave the devatas enormous power.

Both the devatas and asuras were the progeny of swayambhoo prajapati, who gave a triple world to his younger sons — the devatas — and another, larger in area, to the asuras. This differentiation in size came about because the asuras were more numerous. Although they had a larger area under their control, the asuras had an avaricious mentality and so they continued to covet the land of the devatas. However, they could not harm the devatas because the latter had harnessed the enormous power flowing from yajnya.

The asuras then began to infiltrate Asia Minor from the south, on the pretext that they were there to meet their father, for whom they had great reverence, and pay their respects to prajapati. In this way they gradually established control over that region, although the devatas resisted them to the best of their ability. But Chandrama, who had eloped with the wife of his guru, betrayed them and so the asuras were able to destroy the soma plant which was an essential ingredient in the successful application of yajnya. The power of the devatas was gravely undermined with the destruction of soma; their arrangements gave way and the established structures collapsed. This is the ancient history of Bharatavarsha.[335]

On occasions devatas would travel outside their dominion, come to Bharatavarsha and stay at Kurukshetra, which was not under the rule of any king and was reserved for the devatas who came from swarga. Thus, this place is described in the *Shrimad Bhagwad Geeta* as *dharmakshetra* — the place of dharma. However, whenever the term 'Kurukshetra' occurs in veda, we should take it to signify the bradhnasya vishtap mentioned above. The devatas would perform yajnya here, and the asuras

attacked them from the south, as indicated in *Shatpatha Brahmana*.[336]

The human devatas, who were performing yajnya in the north of Kurukshetra, began to fear an attack by the asuras from the south and became apprehensive that the asuras would come and destroy their yajnya. They held an assembly to find one among them with the necessary courage to protect their southern flank when yajnya was being performed, and thereby assure an environment free from fear in which they might continue with the performance of yajnya in the north. After considerable deliberation, they decided to post the strongest among them on the northern flank to face the aggression of the asuras.

Devatas belong to three groups: the offspring of vasu, the offspring of rudra and the offspring of aditya. Vasu's offspring derived their strength primarily from agni, the *raudras* from wayu and the aditya offspring from Indra. Indra was an offspring of aditya and the emperor of swarga. He had harnessed Indra prana, a supraphysical energy operating in the cosmic order, and was known to be extremely powerful. Indra prana is the source of strength in the cosmic order. The atma of the Indra (a human being who ruled swarga) was comprised of these supraphysical energies. Since he was the strongest among the devatas, it was decided that Indra should sit on the northern side of the yajnya to ensure that operations could be conducted without any obstruction.[337]

Archaeological evidence[338] suggests that a highly sophisticated, urbanised culture had prospered in what is now the north-western part of the South Asian subcontinent from about 2600 to 2000 BC. A large part of this area is now recognised as the Indus Civilisation, which was earlier called Eastern Bharatavarsha. Experts are of the opinion that this area functioned as a virtually self-contained political and cultural

arena for the last 4000 years, and gave rise to a distinctive pluralist tradition. Diverse ways of pursuing Truth were celebrated and not condemned in this culture. Buddhism and Jainism also originated in this ancient country. The historical outlines delineated above on the basis of enquiry into Vedic sources can more easily be glimpsed from recent history, which records intermittent incursions from the north. The closeness of the cultural ambience of Bharatavarsha can also be discovered from the quantum of evidence of relations between India and Iran.

The Indo-Iranian borderlands form the eastern extension of the Iranian Plateau and in some ways mirror the environment of the Fertile Crescent extending from the Tigris-Euphrates system to the Nile valley. Across the plateau, lines of communication existed from early antiquity, which would suggest a broad parallelism of developments at both the eastern and western extremities, according to available evidence. During the late 20th century, excavations at Mehrgarh and elsewhere revolutionised knowledge of early settlements on the borders of the Indus system and Baluchistan. The group of sites at Mehrgarh provides evidence of some 5000 or 6000 years of occupation, comprising two major periods — the first from the 8th to the 6th millennium BC and the second from the 5th to the 4th (and possibly the 3rd) millennium.

The earliest evidence occurs in a 23-foot-deep mound discovered beneath massive alluvial deposits. The 7th to 6th millennium is characterised by the emergence of pottery and improvements in agriculture. A new type of building, the small regular compartments of which can almost certainly be identified as a granary, has been located during this phase, indicating the frequent occurrence of crop surpluses. Evidence at Mehrgarh provides a clear picture of an early agricultural

settlement, architecture and a variety of well-established crafts. It also shows the existence of trade networks extending from the coast and perhaps also from the areas currently described as Central Asia. Experts are of the view that some major tectonic event took place at the beginning of the period (c.5500 BC), causing the deposition of great quantities of silt on the plain, almost completely burying the original mound at Mehrgarh. Nearly all features of the earlier culture persisted, albeit in altered form.

The granary structures proliferated, sometimes on a larger scale. The remains of several massive brick walls and platforms suggest something approaching monumental architecture. Evidence appears of several new crafts, including the use of copper and ivory. The area of the settlement appears to have grown, and an increasing population is also indicated. The settlement at Mehrgarh should not be perceived as a unique site. There are indications (not yet fully explored) that other equally early sites may exist in other parts of Baluchistan and elsewhere on the Indo-Iranian borderlands.

At Sarai Khola (near Taxila in the Pakistan Punjab) the earliest occupation dates from the end of the 4th millennium and clearly represents a tradition quite distinct from that of contemporary Sindh or Baluchistan. The same is the case at Burzahom in the Vale of Kashmir, where evidence of the 'aceramic Neolithic' stage is reported at Gufkral, another site in Kashmir, which has been dated by radiocarbon to the 3rd millennium and later. From about 5000 BC increasing numbers of settlements began to appear throughout the Indo-Iranian borderlands. These, as far as can be judged, were village communities employing common means in the cultivation of wheat, barley, and other crops and in the keeping of cattle, sheep and goats. There was a broadly common level of technology.

Modern experts also point out that at a somewhat later date, probably toward the middle of the 4th millenium BC, agricultural settlements began to spread more widely in the Indus Valley itself. The earliest of these provide clear links with the cultures along or beyond the western margins of the Indus Valley. In the course of time a remarkable change took place in the form of the Indus settlements, suggesting that some kind of closer interaction was developing, often over considerable distances, and that a process of convergence was underway. The full urban society emerged at Harappa and at similar sites around 2600 BC. All this suggests four or five millennia of uninterrupted economic life in the Indus region.

Much research, excavation and comparative analysis are required before this fertile and provocative period can be understood. A number of parallels exist between developments on the Indus and the rise of civilisation in Mesopotamia. It is striking to compare the Indus with this better-known and more fully documented region and to see how closely the two coincide with respect to the emergence of cities and of such major concomitants of civilisation as writing, and standardised weights and measures. Yet nearly all the earlier writers have sensed the 'Indianness' of the civilisation.

Although Western scholars have presented a picture that "India confronts Egypt and Babylonia by the 3rd millennium with a thoroughly individual and independent civilization of her own, technically the peer of the rest,"[339] it is possible that these were not in conflict but parts of a common civilisation with specific traits. "The Indus civilization represents a very perfect adjustment of human life to a specific environment. And it has endured; it is already specifically Indian and forms the basis of modern Indian culture."[340] There is further need to investigate the relationship between what the West

describes as India and to what extent this could be a part of the greater civilisation of Bharatavarsha.

Modern experts concede that it is still impossible to do more than guess at the social organisation or the political and administrative control implied by this vast area of cultural uniformity. The evidence of widespread trade in many commodities, the apparent uniformity of weights and measures, the common script, and the uniformity — almost common currency — of the seals all indicate some measure of political and economic control and point to the great cities of Mohenjo-daro and Harappa as their centres. Experts assert that: "The presence of the great granaries on the citadel mounds in these cities and of the 'citadels' themselves suggests — partly on the analogies of the cities of Mesopotamia — the existence of priest-kings, or at least of a priestly oligarchy, that controlled the economy and civil government."[341]

Archaeological excavations in Mesopotamia, conducted since about 1840, have revealed evidence of settlement back to about 10,000 BC. Trade with other regions also flourished. Irrigation techniques, pottery and other crafts, and building methods based on clay bricks were developed to a high level, and elaborate religious traditions evolved. Babylonian culture declined from about 1600 to 1450 BC. Experts say that peoples known as the Hurrians and the Kassites migrated into Mesopotamia and established themselves as rulers. Towards the end of the 15th century BC, the city of Ashur in northern Mesopotamia — a region which came to be known as Assyria — began its rise, and the Assyrian Empire was well established by 1350 BC. It may be noted here that the word 'Ashur' is phonetically very close to the Vedic term 'asura'. (Devas and asuras, as noted earlier, were the progeny of prajapati and were constantly at war with each other.)

Babylon enjoyed one last period of glory under a dynasty of Chaldeans founded by Nabopolassar (626-605 BC). His son, Nebuchadrezzar II (605-561), is best known for his destruction of Jerusalem in 588 or 587, forcing thousands of Jews into 'Babylonian exile'. Experts assert that in Mesopotamia, a historical region in south-west Asia, the world's earliest civilisation developed. The name 'Mesopotamia' comes from a Greek word meaning 'between rivers', referring to the land between the Tigris and Euphrates rivers, but the region can be broadly defined to include the area that is now eastern Syria, south-eastern Turkey and most of Iraq. This region was the centre of a culture whose influence extended throughout the Middle East and as far as the Indus valley, Egypt and the Mediterranean.

We need to view the outlines of the history and geographical contours of Bharatavarsha, as suggested by the scholars of the *Vedas*, against the backdrop of these findings of modern scholarship. It is important to look at the areas which, according to them, demand further exploration. Only a prejudiced mind would dismiss the Vedic picture as totally speculative or imaginary. If we accept the plausibility of this picture, we have to acknowledge the need to further enquire whether Bharatavarsha, as a cultural and civilisational entity, extended to the boundaries of this vast area. The recently-drawn boundaries of Bharatavarsha could well be just the middle of that region. If this is so, it opens up a vast and hitherto unexplored area of research into the world of the *Vedas* and the seer-scientists, their pursuit of knowledge and science and the meaning of their concepts.

SECTION SEVEN

Key to Phonetics for Appendices

VOWELS AND DIPTHONGS:

a	/a/	as in	avyaya	[indestructible]
aa	/ā/	as in	âkāḥa	[ether / sky]
i	/i/	as in	*i*ti	[this / end]
ii/ee	/ī/	as in	īúavara	[the controller / God]
e	/e/	as in	*e*kaṁ	[one]
u	/u/	as in	*u*tpala	[lotus]
uu	/ĭ/	as in	ĭrjā	[energy]
o	/o/	as in	*o*jas	[vigour]
ai	/ai/	as in	*Ai*tareya	[name of a Upaniṣad / Brāhmaṅa]
au	/au/	as in	*au*ṣadhi	[medicine]
am	/aṁ/; /an/	as in	*an*úa	[part]
ah	/ḥ/	as in	antaḥ	[intra; within]

CONSONANTS:

ka	/ka/	as in	*ka*mala	[lotus]
kha	/kha/	as in	*kh*aga	[bird]
ga	/ga/	as in	*ga*gana	[sky]
gha	/gha/	as in	*gha*na	[dense; cloud]
anga	/N/	as in	a*N*ga	[part]
cha	/ca/	as in	*ca*rma	[skin]
chha	/cha/	as in	*cha*tra	[umbrella]
ja	/ja/	as in	*ja*la	[water]
jha	/jha/	as in	*jha*s?a	[fish]
jn	/jñ/	as in	Pratya-bhi*j*ñā	[re-cognition; name of a philosophical system]
ta	/t?a/	as in	pa*ṭa*	[cloth]
tha	/t?ha/	as in	pā*ṭha*	[text; recitation]
da	/d?a/	as in	ṣa*ḍ* darúana	[six philosophical systems]
dha	/d?ha/	as in	aṣh*ḍha*	[a month in the Hindu calendar]
na/	/ṅa/	as in	kar*ṅa*	[ear]
ta	/ta/	as in	*ta*la	[surface]
tha	/tha/	as in	*tha*la	[land]
da	/da/	as in	*da*la	[group]
dha	/dha/	as in	*dha*na	[property]
na	/na/	as in	*na*yana	[eye]
pa	/pa/	as in	*pa*vana	[wind]
pha	/pha/	as in	*pha*la	[fruit]
ba	/ba/	as in	*ba*la	[power; energy]

bha	/bha/	as in	na*bha*	[sky; ether]
ma	/ma/	as in	*ma*la	[impurity]
ya	/ya/	as in	*Ya*ma	[name of the god of death]
ra	/ra/	as in	*ra*sa	[juice; essence]
la	/la/	as in	*la*ya	[rhythm; dissolution]
wa	/va/	as in	*va*na	[forest]
sha	/úa/	as in	*úa*ta	[hundred]
sha	/ṣa/	as in	*ṣa*ṣṭha	[sixth]
sa	/sa/	as in	*sa*pta	[seven]
ha	/ha/	as in	*ha*sta	[hand]
ksha	/kṣa/	as in	*kṣa*ra	[destructible]
tra	/tra/	as in	sa*tra*	[session]
tri	/tṛ/	as in	*tṛ*ṅa	[grass]
ri	/ṛ/	as in	ṛṅa	[debt]

APPENDIX ONE
R E F E R E N C E S

ORIGINAL VERSES IN DEVANAGARI AND ROMAN SCRIPTS

PREFACE

मंत्रब्राह्मणयोरवेदनामाधेयम् । ऋग्वेद (सायणभाष्य)
mantrabrāhmaṇayorvedanāmadheyaṁ /
Ṛgveda (Sāyaṇabhāṣya)

अहं ब्रह्मास्मि । बृह्दारण्यक उपनिषद् । 1 / 4 / 10
ahaṁ bhrahmāsmi / *Bṛhadāraṇyaka Upaniṣad* 1/4/10

नासदीय सूक्त : ऋग्वेद 10 / 129 / 1–7.
Nāsadīya Sūkta : *Ṛgveda* 10/129/1-7.

नासदासीन्नो सदासीत् तदानीं नासीद्रजो नो व्योमा परो यत् ।
किमावरीवः कुह कस्य शर्मन्नम्भः किमासीद्गहनं गभीरम् ।। 1 ।।
nāsadāsīnno sadāsīt tadānīṁ nāsīdrajo no vyomā paro yat /
kimāvarīvaḥ kuha kasya śarmannambhaḥ kimāsīdgahanaṁ ghabhīraṁ //1//

न मृत्युरासीदमृतं न तर्हि न रात्र्या अह्न आसीत् प्रकेतः।
आनीदवातं स्वधया तदेकं तस्माद्धान्यन्न परः किं चनास।। 2 ।।
na mṛtyurārsīdamṛtaṁ na tarhi na rātryā ahna āsīt praketaḥ /
ānīdavātaṁ svadhayā tadekaṁ tasmāddhānyanna paraḥ kiṁ canāsa //2//

तम आसीत् तमसा गूळहमग्रेऽप्रकेतं सलिलं सर्वमा इदम् ।
तुच्छ्येनाभ्वपिहितं यदासीत् तपसस्तन्महिनाजायतैकम् ।। 3 ।।
tama āsīt tamasā guḷahmgre'praketaṁ salilaṁ sarvamā idaṁ /
tucchyenābhvapihitaṁ yadāsīt tapastanmahinājāyataikaṁ //3//

कामस्तदग्रे समवर्तताधि मनसो रेतः प्रथमं यदासीत् ।
सतो बन्धुमसति निविन्दन् हृदि प्रतीष्या कवयो मनीषा ।। 4 ।।
kāmastadagre samavartatādhi manaso retaḥ prathamaṁ
sadāsīt/
sato bandhumsati nirvindan hṛdi pratīṣyā kavayo maniṣā //4//

तिरश्चीनो विततो रश्मिरेषामधः स्विदासी३दुपरिं स्विदासी३त् ।
रेतोधा आसन् महिमान आसन् त्स्वधा अवस्तात् प्रयतिः
परस्तात् ।। 5 ।।
tiraścīno vitato raśmireṣāmadhaḥ svidāsī3dupari svidāsī3t/
retodhā āsan mahimāna āsan tsvadhā avastāt prayatiḥ
parastāt //5//

को अद्धा वेद क इह प्र वोचत् कुत आजाता कुत इयं विसृष्टिः ।
अर्वाग्देवा अस्य विसर्जनेनाऽथा को वेद यत आबभूव ।। 6 ।।
ko addhā veda ka iha pra vocat kuta ājātā kuta iyaṁ visṛṭiḥ/
arvāgdevā asya visarjanenā'thā ko veda yata ābabhūva //6//

इयं विसृष्टिर्यत आबभूव यदि वा दधे यदि वा न ।
यो अस्याध्यक्षः परमे व्योमन् त्सो अङ्ग वेद यदि वा न वेद ।। 7 ।।
iyaṁ visṛṣṭiryat ābabhūva yadi vā dadhe yadi vā na/
yo asyādhyākṣaḥ parame vyomn tso aṅga veda yadi vā
na veda //7//

शान्ताकारं भुजग शयनं पद्मनाभं सुरेशं
विश्वाधारं गगनसदृशं मेघवर्णशुभाङ्गम् ।
लक्ष्मीकान्तं कमलनयनं योगिभिर्ध्यानगम्यं
वन्दे विष्णुं भवभयहरं सर्वलोकैकनाथम् ।।
(ध्यानमंत्र : विष्णुसहस्रनाम्)
śāntākāraṁ bhujagśayanaṁ padmanābhaṁ sureśaṁ
viśvādhāraṁ gaganasadṛśaṁ megha varṇaṁ śubhāṅgaṁ/
lakṣamīkāntaṁ kamalanayanaṁ yogibhirjñānagamyaṁ
vande viṣṇuṁ bhvabhayaharaṁ sarvalokaikanāthaṁ//
Mahābhārata: Śānti Parva (Viṣṇusahśranāma)

चातुर्वर्ण्यं त्रयो लोकाश्चत्वारश्चाश्रमाः पृथक् ।
भूतं भव्यं भविष्यं च सर्वं वेदात्प्रसिध्यति ।।

मनुस्मृति 12/97

cāturvarṇyaṁ trayo lokāścatvāraścāśramāḥ pṛthak/
bhūtaṁ bhvavyaṁ bhaviṣyaṁ ca sarvaṁ vedātprasidhyati//

Manusmṛti 12/97.

SECTION ONE

UNIVERSE OF DARSHANA

अपां संघातो विलयन च तेजः संयोगात् ।

वैशेषिक सूत्र 5/2/18

apāṁ samghāto vilayana ca tejaḥ saṁyogāt /

Vaiśeṣika Sūtra: 5/2/18.

SECTION TWO

THE TEN DOCTRINES OF DEVA YUGA

नासदीय सूक्तः (*Nāsadīya Sūkta*) ऋग्वेद (*Ṛgveda*) 10/129/1–7
cited in PREFACE

किं स्विद् वनं क उ स वृक्ष आस यतो द्यावा पृथिवी निष्टतक्षुः।
मनीषिणो मनसा पृच्छतेदु तद् यदध्यतिष्ठद् भुवनानि धारयन्।।

ऋग्वेद – 10/81/4

kiṁ svid vanaṁ ka u sa vṛkṣa āsa yato dyāvā pṛthivī niṣṭatakṣuḥ/
manīṣiṇo manasā pṛcchatedu tad yadadhyatiṣthad bhuvanāni dhārayan//

Ṛgveda 10/81/4

ब्रह्म वनं ब्रह्म स वृक्ष आस यतो द्यावा पृथिवी निष्ट तक्षुः।
मनीषिणो मनसा विब्रवीमि यो ब्रह्माध्यतिष्ठद् भुवनानि धारयन ।।

तैत्तिरीय ब्राह्मण 2/8/9

brahma vanaṁ brahma sa vṛkṣa āsa yato dyāvā pṛthivī
niṣṭatakṣuḥ /
manīṣiṇo manasā vibravīmi yo brahmādhyātiṣṭhad
bhūvanāni dhārayan //
Taittirīya Brāhmaṇa 2/8/9

AN ENCOUNTER WITH BRAHMA

Ṛgveda 10/81/4; *Taittirīya Brāhmaṇa* 2/8/9: quoted in THE TEN DOCTRINES OF DEVA YUGA

गतिर्भर्ता प्रभुः साक्षी निवासः शरणं सुहृत्।
प्रभवः प्रलयः स्थानं निधानं बीजमव्ययम्।। गीता 9/18
gatirbhartā prabhuḥ sākṣī nivāsaḥ śaraṇaṁ suhṛt /
prabhavaḥ pralayaḥ sthānaṁ nidhānaṁ bījamavyayaṁ //
Gītā 9/18

नैव वाचा न मनसा प्राप्तं शक्यो न चक्षुषा।
अस्तीति ब्रुवतोऽन्यत्र कथं तदुपलभ्यते।।
naiva vācā na manasā prāptaṁ śakyo na cakṣuṣā /
astīti bruvato'nyatra kathaṁ taduplabhyate //

अस्तीत्येवोपलब्धव्यस्तत्त्वभावेन चोभयोः।
अस्तीत्येवोपलब्धस्य तत्त्वभावः प्रसीदति।।
कठोपनिषद् 2/3/12–13
astītyevopalabdhavyastattvabhāvena cobhayoḥ /
astītyevopalabdhasya tattvabhāvaḥ prasīdati //
Kaṭhopaniṣad 2/3/12-13

रसो वै सः। तैत्तिरीय उपनिषद् 2/7
raso vai saḥ / *Taittirīya Upaniṣad* 2/7

रसोऽहमप्सु कौन्तेय प्रभाऽस्मि शशिसूर्ययोः।
प्रणवः सर्ववेदेषु शब्दः खे पौरुषं नृषु।। गीता 7/8

raso'hamapsu kaunteya prabhā'sami śaśisūryayoḥ /
praṇavaḥ sarvavedeṣu śabdaḥ khe pauruṣaṁ nṛṣu //

Gītā 7/8

THE FOUR LIMBS OF BRAHMA

चतुष्टयं वा इदं सर्वम्। (कौषीतकी श्रुति) विज्ञानविद्युत् पृ. 2

catuṣṭayaṁ vā idaṁ sarvaṁ /

(*Kauṣītakī Śruti*) *Vijñānavidyut* p.2

THE FIVE FACETS OF AKSHARA

ब्रह्मास्य सर्वस्य प्रतिष्ठा।

(शतपथ ब्राह्मण 6/1/8) विज्ञानविद्युत् पृ. 21

Brahmāsya sarvasya pratiṣṭhā /

(*Śatapatha Brāhmaṇa* 6/1/8) *Vijñānavidyut* p.21

THE CONTOURS, COMPOSITON AND SIGNIFICANCE OF AWYAYA

मनो वा एतद्यद् अपरिमितम्। प्रजापतिरवै मनः।।

कौषीतकी ब्राह्मण 23/6

mano vā etadyad aparimitaṁ / prajāpatirvai manaḥ //

Kauṣītakī Brāhmaṇa 23/6

न देहो न च जीवात्मा न इन्द्रियाणी परंतप ।
मन एव मनुष्याणां कारण बन्धमोक्षयोः ।।

मैत्रायणी आरण्यक 6/34/11

na deho na ca jīvātmā na indriyāṇī parantapa /
mana eva manuṣyāṇāṁ kāraṇa bandhamokṣyoḥ //

Maitrāyaṇī Āraṇyaka 6/34/11

अन्तरस्मिन्निमे लोकः, अन्तर विश्वमिदँ जगत्।
ब्रह्मैव भूतानां जेष्ठमयेन को हिहति स्पर्द्धितम्।।
ब्रह्माणदेवास्त्रय त्रिंशद ब्रह्मान्निन्द्र प्रजापती।
ब्रह्मण् ह विष्वा भूतानि नावीवान्तः समाहिताः।।
(अथर्ववेद) विज्ञान विद्युत् पृ. 35

antarasminnime lokaḥ, antara viśvamidaṁ jagat /
brahmaiva bhūtānāṁ jesṭhamayena ko hihati spardhitaṁ //
brahmāṇdevāstraya triṁśada brahmānnindra prajāpatī /
brahmaṇ ha viśvā bhūtāni nāvīvāntaḥ samāhitāḥ //
(*Atharvaveda*) *Vijñānavidyut* p.35

सहस्रं वा अस्मै तत्प्रयच्छदः– ऋचः, सामानि, यजूंषि तद्वा इदम्
किंच त्रैधातव्यः।
इन्द्रश्च विष्णुश्च इति सहस्रम् अधिष्ठितः।। मैत्रेयी संहिता 4/3–4
sahasraṁ vā asmai tatprayacchadaḥ- ṛchaḥ, sāmāni,
yajūnṣi tadvā idaṁ kiñca traidhātavyaḥ /
indraśca viṣṇuśca iti sahastraṁ adhiṣṭhitaḥ //
Maitreyī Samhitā 4/3-4

उभा जिग्यथुर्न पराजयथे न पराजिग्ये कतश्च नैनोः।
इन्द्रश्च विष्णो यदस्पर्धेतं त्रेधा सहस्रं वितदैर येथम्।।
मैत्रेयी संहिता 1/6/7/7
ubhā jigyathurna parājayathe na parājigye kataśca nainoḥ /
indraśca viṣṇo yadaspardhetaṁ tredhā sahastraṁ vitadaira
yethaṁ //
Maitreyī Saṁhitā 1/6/7/7

षड्धा वै ब्रह्मणो द्वारः– अग्निः, वायुरांपश्चन्द्रमाः विद्युत्, आदित्यः।
शतपथ ब्राह्मण 1/1/3/2
ṣaḍadhā vai brahmaṇo dvāraḥ- agniḥ, vāyurāmpaścandramāḥ
vidyut, ādityaḥ / *Śatapatha Brāhmaṇa* 1/1/3/2

ऋतमेव परमेष्ठी ऋतं नात्येति किंचन।
ऋते समुद्र आहितं, ऋते भूमिरिन्यं श्रिता।।

तैत्तिरीय ब्राह्मण काण्ड 2

ṛtameva parameṣṭhī, ṛtaṁ nātyeti kiñcana /
ṛte samudra āhitaṁ, ṛte bhūmirinayaṁ śritā //

Taittirīya Brāhmaṇa Kāṇḍa 2

तत्सूर्यस्य देवत्वं तन्महित्वं, मध्याकर्तोविततं संजभार।

(कौत्स अंगिरस) विज्ञान विद्युत् पृ. 40

tatsūryasya devatvaṁ tanmahitvaṁ, madhyākartovitataṁ sañjabhāra /

(*Kautsa Aṅgirasa*) *Vijñānavidyut* p.40

उरुं हि राजा वरुणश्चकार सूर्याय पन्थामन्वेतवा उ।
अपदे पादा प्रतिधातवेऽकरुतापवक्ता हृदया विधश्चित।।

ऋग्वेदः 1/24/8

uruṁ hi rājā varuṇaścakāra sūryāya panthāmanvetavā u /
apade pādā pratidhātave'karutāpavaktā hṛdayā vidhaścit //

Ṛgveda 1/24/8

यत् परममवमं यच्च मध्यमं प्रजापतिः ससृजे विश्वरूपम्।
कियता स्कम्भः प्र विवेश तत्र यन्न प्राविशत् कियत् तद् वभूव।।

अथर्ववेद 10/7/8

yat paramamavaṁ yaccha madhyamaṁ prajāpatiḥ sasṛje viśvarūpaṁ /
kiyatā skambhaḥ pra viveśa tatra yanna prāviśt kiyat tad vabhūva //

Atharva Veda 10/7/8

त्वमग्नेऽङ्गिराः प्रथम ऋषिः। विज्ञानविद्युत् पृ. 44
tvamagne'aṅgirāḥ prathama ṛṣiḥ / *Vijñānavidyut* p.44.

ते देवा अब्रुवन् न वा इम मन्नयत्सोमोद्धिनुयात्सोममेवाऽस्मै सम्भरामेति तस्मै सोमः सम्भरन्नेष वै सोमो राजा देवानामन्नं यच्चन्द्रमाः स यत्रैष एतां रात्रिं न पुरस्तान्न पश्चाद्ददृशे तदिमं लोकमागच्छति स इहैवाऽपश्च्चौषधीरश्च प्रविशति स वै देवानां वस्वन्न ह्येषां तद्यदेष एतां रात्रिमिहाऽमा वसति तस्मादमावास्या नाम।

शतपथ ब्राह्मण – 1/6/4/5

te devā abruvan na vā ima mannayattsomoddhinuyātsomamevā'smai sambharāmeti ṭasmai somaḥ sambharanneṣa vai somo rājā devānāmannaṁ yacchandramāḥ sa yatraiṣa etāṁ rātriṁ na purastānna paścāddadṛśe tadimaṁ lokamāgacchati sa ihaivā'paścchouṣadhīraśca praviśati sa vai devānāṁ vasvanna hyeṣāṁ tadyadeṣa etāṁ rātrimihā'mā vasati tasmādamāvāsyā nama / *Śatapatha Brāhmaṇa* 1/6/4/5

दिस्रो द्यावो निहिता अन्तरस्मिन भूमिरुपराः षड्विधाना।
गृत्सो राजा वरुणश्चक्र एतं दिवि प्रेंखं हिरणमयं शुभेकम्।।

विज्ञानविद्युत् पृ. 47

disro dyāvo nihitā antarasmin bhūṃiruparāḥ ṣaḍvidhānā /
gṛtso rājā varuṇaḥcakra etaṁ divi preṅkhaṁ hiraṇmayaṁ śubhekem //

Vijñānavidyut p.47

तिस्रो द्यावः सवितुर्द्धा उपस्थां एका यमस्य भुवने विराषाट् आणि न रथ्यममृताधितस्थुरिह ब्रवीतु य उ तश्चिकेत्तत्।

विज्ञानविद्युत् पृ. 47

tisro dyāvaḥ saviturddhā upasthāṁ ekā yamasya bhuvane virāṣāṭ āṇi na rathyamamṛtādhitasthuriha bravītu ya u taścikettat / *Vijñānavidyut* p.47

त्रयो वा इमे त्रिवृतो। लोकाः अद्धावैतद् यदिमेलोकाः।
अनद्धा वै तद् यदिमान् लोकानति चतुर्थम्। अस्ति वा न वा।

(शतपथ ब्राह्मण) विज्ञानविद्युत् पृ. 47

trayo vā ime trivṛto / lokaḥ addhāvaitad yadimelokāḥ / anaddhā vai tad yadimān lokānati caturthaṁ / asti vā na vā /

(*Śatapatha Brāhmaṇa*) *Vijñānavidyut* p.47

एतदालम्बनं श्रेष्ठमेतदालम्बनं परम्।
एतदालम्बनं ज्ञात्वा यो यदिच्छति तस्यतत्।। विज्ञानविद्युत् पृ. 50

etadālambanaṁ śreṣṭhametadālambanaṁ paraṁ /
etadālambanaṁ jñātvā yo yadicchati tasyatat //

Vijñānavidyut p. 50.

THE COSMOS: THE MEANING OF CREATION AND DISSOLUTION

यदक्षरं पंचविधं समेति युजो युक्ता अभियत् संवहन्ति।
सत्यस्य सत्य मनु यत्र युज्यते तत्र देवाः सर्व एकी भवन्ति।।

(ऐतरेय ब्राह्मण 2/3/8) विज्ञानविद्युत् पृ. 70

yadakṣarṁ pañcavidhaṁ sameti yujo yuktā abhiyat samvahanti /
satyasya satya manu yatra yujyate tatra devāḥ sarva ekī bhvanti //

(*Aitareya Brāhmana* 2/3/8) *Vijñānavidyut* p.70

हिरण्मये परे कोषे विरजं ब्रह्म निष्कलम्।
तच्छुभ्रं ज्योतिषां ज्योतिस्तद्यदात्मविदो विदुः।।

मुण्डक उपनिषद् 2/2/9

hiraṇyamaye pare koṣe virajaṁ brahma niṣkalaṁ /
tacchubhraṁ jyotiṣāṁ jyotistadyadātmavido viduḥ //

Muṇḍaka Upaniṣad 2/2/9

प्राणो ब्रह्मेति व्यजानात्। प्राणाद्धयेव खल्विमानि भूतानि जायन्ते।
प्राणेन जातानि जीवन्ति। प्राणं प्रयन्त्यभिसंविशन्तीति ।
तद्विज्ञाय पुनरेव वरुणं पितरमुपसार। अधीहि भगवो ब्रह्मेति ।
तँहोवाच। तपसा ब्रह्म विजिज्ञसस्व। तपो ब्रह्मेति। स तपोऽतप्यत ।
स तपस्तप्त्वा। तैत्तिरीयोपनिषद् 3/3

prāṇo brahmeti vyajānāt / prāṇāddhyeva khalvimāni bhūtāni jāyante / prāṇena jātāni jīvanti / prāṇaṁ prayantyabhisamviśantīti / tadvijñāya punareva varuṇaṁ pitaramupasāra / adhīhi bhagavo brahmeti / taṁ hovāca / tapasā brahma vijijñāsasva / tapo brahmeti / sa tapo'tapyata / sa tapastaptvā / *Taittirīyopaniṣad* 3/3

मया ततमिदं सर्वं जगदव्यक्तमूर्तिना।
मत्स्थानि सर्वभूतानि न चाहं तेष्ववस्थितः।। गीता 9/4
mayā tatamidaṁ sarvaṁ jagadavyaktamūrtinā /
matsthāni sarvabhūtāni na cāhaṁ teṣvavasthitaḥ //

Gītā 9/4

यथाकाशस्थितो नित्यं वायुः सर्वत्रगो महान्।
तथा सर्वाणि भूतानि मत्स्थानीत्युपधारय।। गीता 9/6
yathākāśasthito nityaṁ vāyuḥ saravatrago mahān /
tathā sarvāṇi bhūtāni matsthānītyupadhāraya //

Gītā 9/6

पुरुषः स परः पार्थ भक्तया लभ्यस्त्वनन्यया।
यस्यान्तःस्थानि भूतानि येन सर्वमिदं ततम्।। गीता 8/22
puruṣaḥ sa paraḥ pārtha bhaktyā labhyastvananyā /
yasāntaḥsthāni bhūtāni yena sarvamidaṁ tataṁ //

Gītā 8/22

द्वाविमौ पुरुषौ लोके क्षरश्चाक्षर एव च।
क्षरः सर्वाणि भूतानि कूटस्थोऽक्षर उच्यते।।
dvāvimau puruṣau loke kṣaraścākṣara eva ca /
kṣaraḥ sarvāṇi bhūtāni kūṭastho'kṣara uccayate //
उत्तमः पुरुषस्त्वन्यः परमात्मेत्युदाहृतः।
यो लोकत्रयमाविश्य बिभर्त्यव्यय ईश्वरः।।
uttamaḥ puruṣastvanyaḥ paramātmetyudāhṛtaḥ /
yo lokatrayamāviśya bibhatyarvyaya īśvaraḥ //

यस्मात्क्षरमतीतोऽहमक्षरादपि चोत्तमः।
अतोऽस्मि लोके वेदे च प्रथितः पुरुषोत्तमः।।
yasmātkṣaramatīto'hamakṣrādapi cottamaḥ /
ato'smi loke vede ca prathitaḥ puruṣottamaḥ //

गीता 15/16–18
Gītā 15/16-18

अव्यक्तं व्यक्तिमापन्नं मन्यन्ते मामबुद्धयः।
परं भावमजानन्तो ममाव्ययमनुत्तमम्।।
ayaktaṁ vyaktimāpannaṁ manyante māmbuddhayaḥ /
paraṁ bhāvaṁajānanto mamāvyayamanuttamaṁ //
नाहं प्रकाशः सर्वस्य योगमायासमावृतः।
मूढोऽयं नाभिजानाति लोको मामजमव्ययम्।।
nāhaṁ prakāśaḥ sarvasya yogamāyāsamāvṛtaḥ /
mūḍho'yaṁ nābhijānāti loko māmajamavyayaṁ //

गीता 7/24–25
Gītā 7/24-25

त्रिभिर्गुणमयैर्भावैरेभिः सर्वमिदं जगत्।
मोहितं नाभिजानाति मामेभ्यः परमव्ययम्।। गीता 7/13
tribhirguṇamayairbhāvairebhiḥ sarvamidaṁ jagat /
mohitaṁ nābhijānāti māmebhyaḥ paramavyayaṁ //
Gītā 7/13

पुरुषं एवेदं सर्वं यद् भूतं यच्चाभव्यम्। विज्ञानविद्युत् पृ. 75
puruṣaṁ evedaṁ sarvaṁ yad bhūtaṁ yacchāmavyayaṁ /
Vijñānavidyut p.75

न तस्य प्रतिम अनास्ति यस्य नाम महद्‌यशः। विज्ञानविद्युत् पृ. 77
na tasya pratima anāsti yasya nāma mahadyaśaḥ /
Vijñānavidyut p.77

एकमेवाद्वितीयं ब्रह्म। त्रिपाद्विभूतिमहानारायणोपनिषद् 3/3

ekamevādvitīyaṁ brahma /

Tripādvibhūtimahānārāyaṇopaniṣad 3/3

ब्रह्मणो हि प्रतिष्ठाहममृतस्याव्ययस्य च।
शाश्वतस्य च धर्मस्य सुखस्यैकान्तिकस्य च।। गीता 14/27

brahmaṇo hi pratiṣṭhāhamamṛtasyāvyayasya ca /
śāśvatasya ca dharmasya sukhasyaikāntikasya ca //

Gītā 14/27

यतो वाचो निवर्तन्ते अप्राप्य मनसा सह। आनन्दं ब्रह्मणो विद्वान्
न विभेति कुतश्चनेति । तैत्तिरीयोपनिषद् 2/9

yato vāco nivartante aprāpya manasā saha / ānandaṁ
brahmaṇo vidvān na vibheti kutaścaneti /

Taittirīyopaniṣad 2/9

यस्यामतं तस्य मतं मतं यस्य न वेद सः।
अविज्ञातं विजानतां विज्ञातमविजानताम्।। केनोपनिषद् 2/3

yasyāmataṁ tasya manaṁ mataṁ yasya na veda saḥ /
avijñātaṁ vijānatāṁ vijñātamavijānatāṁ // *Kenopaniṣad* 2/3

THE MATERIAL, PHYSICAL AND SUPRAPHYSICAL DOMAINS

सर्वतः पाणिपादं तत्सर्वतोऽक्षिशिरोमुखम्।
सर्वतः श्रुतिमल्लोके सर्वमावृत्य तिष्ठति।। गीता 13/13

sarvataḥ pāṇipādaṁ tatsarvato'kṣiḥiromukhaṁ /
sarvataḥ śrutimalloke sarvamāvṛtya tiṣṭhati // *Gītā* 13/13

तस्मातपरं नापरमस्ति किꣳचित् तस्मान्नाणीयो न ज्यायोस्ति कश्चित्
वृक्ष इव स्तब्धो दिवि तिष्ठत्येकस्ते नेदं पूर्ण पुरुषेण सर्वम्।।

विज्ञानविद्युत् पृ. 51

tasmātparṁ nāparamasti kiñcit tasmānnaṇīyo na jyājyotisti kaścit vṛkṣa iva stabdho divi tiṣthatyekaste nedaṁ pūrṇa puruṣeṇa sarvaṁ / *Vijñānavidyut* p.51

अशरीरँ शरीरेष्वनवस्थेश्ववस्थितम्।
महान्तं विभुमात्मानं मत्वा धीरो न शोचति।। कठोपनिषद् 1/2/22

aśarīraṁ śarīreṣvanavastheṣvasthitaṁ /
mahāntaṁ vibhumātmānaṁ matvā dhīro na śocati //
Kaṭhopaniṣad 1/2/22

मम योनिर्महद्ब्रह्म तस्मिन् गर्भं दधाम्यहम्।
सम्भवः सर्वभूतानां ततो भवति भारत।।
mama yonirmahadbrahma tasmin garbha dadhāmyahaṁ /
sambhavaḥ sarvabhūtānāṁ tato bhvati bhārata //
सर्वयोनिषु कौन्तेय मूर्तयः सम्भवन्ति याः।
तासां ब्रह्म महद्योनिरहं बीजप्रदः पिता।।
sarvayoniṣu kaunteya mūrtayaḥ sambhavanti yāḥ /
tāsāṁ brahma mahaddyonirahṁ bījapradaḥ pitā //
गीता 14/3–4
Gītā 14/3-4

दिवो रुक्म उरुचक्षा उदेति, दूरेऽअर्थस्तरणिर्भ्राजमानः।
नूनं जनाः सूर्येण प्रसूता, अयन्नर्थानि कृणवन्नपांसि।।
ऋग्वेद– 7/63/4

divo rukma urucakṣā udeti, dūre'arthastaraṇirbhrājamānaḥ /
nūnaṁ janāḥ sūryeṇa prasūtā, ayannarthāni kṛṇvannapānsi //
Ṛgveda 7/63/4

योऽस्यात्मनः कारयिता तं क्षेत्रज्ञं प्रचक्षते।
यः करोति तु कर्माणि स भूतात्मोच्यते बुधैः ।।
जीवसंज्ञोऽन्तरात्मान्यः सहजः सर्वदेहिनाम्।
येन वेदयते सर्वं सुखं दुःखं च जन्मसु ।। मनुस्मृति 12/12–13

yo'syātmanaḥ kārayitā taṁ kṣetrajña pracakṣate /
yaḥ karoti tu karmāṇi sa bhūtātmocchyate budhaiḥ //
jīvasamjño'ntarātmānyaḥ sahajaḥ sarvadehinām /
yena vedayate sarvaṁ sukhaṁ duḥkhaṁ ca janmasu //

Manusmṛti 12/12-13

कोऽयमात्मेति वयमुपास्महे। कतरः स आत्मा, येन वा पश्यति येन वा श्रृणोति येन वा गन्धानाजिघ्रति येन वा वाचं व्याकरोति येन वा स्वादु चास्वादु च विजानाति।।
यदेतद्धृदयं मनश्चैतत्। संज्ञानमाज्ञानं विज्ञानं प्रज्ञानं मेधा दृष्टिधृतिर्मतिर्मनीषा जूतिः स्मृतिः संकल्पः क्रतुरसुः कामो वश इति सर्वाण्येवैतानि प्रज्ञानस्य नामधेयानि भवन्ति।।

ऐतरेयोपनिषद् 3/1/1–2

ko'yamātmeti vayamupāsmahe / kataraḥ sa ātmā, yena vā paśyati yena vā śruṇoti yena vā gandhānājighrati yena vā vācaṁ vyākaroti yena vā svādu cāsvādu ca vijānāti //
yadetadhṛdayaṁ manaścaitat / samjñānamājñānaṁ vijñāna parjñāna medhā dṛṣṭirdhṛtirmatirmaniṣā jūtiḥ smṛtiḥ saṁkalpaḥ kratarasuḥ kāmo vaśa iti sarvāṇyevaitāni prajñāsya nāmadheyāni bhavanti // *Aitareyopaniṣad* 3/1/1-2

अथाधिदैवतम् – चक्षुः श्रोत्रं मनो वाक् प्राणः, ता एताः पंचदेवता इमं विष्टाः पुरुषम्।
पंचोहैवैता देवता अयं विष्टः पुरुषः। सोऽत्रालोमभ्य आनखाग्रेभ्यः सर्वः साङ्ग आप्यते।
तस्मात् सर्वाणि भूतानि आपिपीलिकाभ्यः – आप्तान्येव जायन्ते।

(ऐतरेयब्राह्मण 1/3/6) विज्ञानविद्युत् पृ. 61

athādhidaivataṁ – cakṣuḥ śrotraṁ mano vāk praṇaḥ, tā etāḥ pañcadevatā imaṁ viṣṭāḥ puruṣaṁ / pañcohaivaitā devatā ayaṁ viṣṭaḥ puruṣaḥ / so'trālomabhyaḥ ānakhāgrebhyaḥ sarva sāṅga āpyate / tasmāt sarvāni bhūtāni āpipīlikābhyaḥ – āptānyeva jāyante /

(*Aitareya Brāhmaṇa* 1/3/6)

स य एषोऽन्तर्हृदय आकाशः। तस्मिन्नयं पुरुषो मनोमयः।
अमष्तो हिरण्मयः।
अन्तरेण तालुके। य एष स्तन इवावलम्बते। सेन्द्रयोनिः।
यत्रासौ केशान्तो विवर्तते। व्यपोह्य शीर्शकपाले। . . . आकाश शरीरं ब्रह्म। सत्यात्म प्राणारामं मनआनन्दम्। शान्तिसमृद्धमृतम्।

तैत्तिरीयोपनिषद् 1/6

sa ya eṣo'ntarhṛdaya ākāśaḥ / tasminnayaṁ puruṣo manomayaḥ / amṛto hiraṇyamayaḥ /
antareṇ tāluke / ya eṣa stana ivāvalambate / sendrayoniḥ /
yatrāsau keśānto vivartate / vyapohya śīrṣakapāle / ...
ākāśaśarīraṁ brahma / satyātma prāṇārāṁ manaānandaṁ /
śāntisamṛddhamṛtaṁ / *Taittirīyopaniṣad* 1/6

यः प्राणः सा प्रज्ञा या प्रज्ञा स प्राणः। सह ह्येतावस्मिन् शरीरे वसतः सहोतिष्ठतः। तमेतामायुरमृत्युपास्वे।

(कौषीतकी श्रुति) विज्ञानविद्युत् पृ. 64

yaḥ prāṇaḥ sā prajñā yā prajñā sa prāṇaḥ / saha hyetāvasmin śarīre vasataḥ sahotiṣṭhataḥ / tametāmāyurmṛtyupāsve /

(*Kauṣītakī Śruti*) *Vijñānavidyut* p.64

SECTION THREE

RASA AND BALA: THE NATURE OF THEIR INTERFACE

वैशेषिक सूत्र (*Vaiśeṣka Sūtra*) 5/2/18 quoted in UNIVERSE OF DARSHANA

INTRODUCING PURUSHA AND PRAKRITI

यत्कारणमव्यक्तं नित्यं सदसदात्मकम्।
तद्विसृषृः स पुरुषो लोके ब्रह्मेति कीर्त्यते।। मनुस्मृति 1/11
yatkāraṇamavyaktaṁ nityaṁ sadasadātmakaṁ /
tadvisṛṣṭaḥ sa puruṣo loke brahmeti kīrtyate //

Manusmṛti 1/11

तत् सहस्रस्यः प्रतिमां विश्वरूपमिति पुरुषो वै सहस्रस्यः प्रतिमा पुरुषस्य हि एव सहस्रं भवति।

शतपथ ब्राह्मण 7/5/2/17

tat sahastrasyaḥ pratimāṁ viśvarūpamiti puruṣo vai sahastrasyaḥ pratimā puruṣasya hi eva sahastraṁ bhavati /

Śatapatha Brāhamaṇa 7/5/2/17

पुरुधा शयति इति पुरुषः। ब्रह्मसिद्धांत पृ. 172

purudhā śayati iti puruṣaḥ / *Brahmasiddhānta* p.172

सर्वकर्माणि मनसा संन्यस्यास्ते सुखं वशी।
नवद्वारे पुरे देही नैव कुर्वन्न कारयन्।। गीता 5/13

sarvakarmāṇi manasā saṁnyasyāste sukhaṁ vaśī /
navadvāre pure dehī naiva kurvanna kārayan // *Gītā* 5/13

पुरे स्थितस्य इति पुरुषः। पुरे वसति इति पुरुषः।

ब्रह्मसिद्धांत पष्ठ 173–74

pure sthitasya iti puruṣaḥ / pure vasati iti puruṣaḥ /

Brahmasiddhānta pp.172-174.

सर्वभूतानि कौन्तेय प्रकृतिं यान्ति मामिकाम्।
कल्पक्षये पुनस्तानि कल्पादौ विसृजाम्यहम्।। गीता 9/7

sarva bhūtāni kaunteya prakṛtiṁ yānti māmikāṁ /
kalpakṣaye punastāni kalpādau viśṛjāmyahaṁ // *Gītā* 9/7

अव्यक्तं कारणं यत्तत्प्रधानमृषिसत्तमैः।
प्रोच्यते प्रकृतिः सूक्ष्मा नित्यं सदसदात्मकम्।।
अक्षय्यं नान्यदाधारममेयमजरं ध्रुवम्।
शब्दस्पर्शविहीनं तद्रूपादिभिरसंहितम्।।

विष्णुपुराण (1/2/19–20)

ayaktaṁ kāraṇaṁ yattapradhānamṛṣisattamaiḥ /
procyate prakṛtiḥ sukṣamā nityaṁ sadasadātmakaṁ //

akṣayyaṁ nānyadādhāramameyamajaraṁ dhruvaṁ /
śabda śparśavihinaṁ tadrūpādibhirsaṁhitaṁ //
Viṣṇupurāṇa 1/2/19-20.

SEVEN PURUSHAS AND PRAJAPATI

एकैको वै जनतायामिन्द्रः।
(तैत्तिरीय ब्राह्मण 1/4/6) ब्रह्मसिद्धांत पृ. 111

ekaiko vai janatāyāmindraḥ /
(*Taittirīya Brāhmaṇa* 1/4/6) *Brahmasiddhānta* p.111

एष वै प्रजापतिः य एष यज्ञस्तायते यस्मादिमाः प्रजाः प्रजाता एतम्वेवाऽप्येतर्ह्यनु प्रजायन्ते स यानु प्रकीर्णे सादयति तस्माद्यास्ताननु प्रजाः प्रजायन्ते ताऽअन्येनाऽत्मनोऽस्यां प्रतितिष्ठन्ति या वै शफैः प्रतितिष्ठन्ति ता अन्येनात्मनोऽस्यां प्रतितिष्ठन्त्यथ यदेतं व्युह्य न तृणं चनान्तर्द्धाय सादयति तस्माद्याऽएतमनु प्रजाः प्रजायन्ते ता आत्मनैवाऽस्यां प्रतितिष्ठन्ति मनुष्याश्च श्वापदाश्च।।
शतपथ ब्राह्मण 4/2/4/16

eṣa vai prajāpatiḥ ya eṣa yajñastāyate yasmādimāḥ prajāḥ prajātā etamvevā'pyetahyarnu prajāyante sa yānu prakīrṇe sādayati tasmādyāstānanu prajā prajāyante tā'anyenā't-tmano'syāṁ pratitiṣṭhanti yā vai śaphaiḥ pratitiṣṭhanti tā anyenātmano'syāṁ pratitiṣṭhantyatha yadetaṁ vyuhya na tṛṇaṁ canāntardhāya sādayati tasmādyā'etamanu prajāḥ prajāyante tā āttmanaivā'syāṁ pratitiṣṭhanti manuṣyāśca śvāpadāśca // *Śatapatha Brāhmaṇa* 4/2/4/16

ब्रह्मस्य सर्वस्य प्रथमजम्। ब्रह्मस्य सर्वस्य प्रतिष्ठेति।
शतपथ ब्राह्मण 6/1/8/10

brahmasya sarvasya prathamajaṁ / brahmasya sarvasya pratiṣṭheti / *Śatapatha Brāhmaṇa* 6/1/8/10

अग्निवायुरविभ्यस्तु त्रयं ब्रह्म सनातनम्।
दुदोह यज्ञ सिद्धयर्थमृग्यजुः सामलक्षणम्।। मनुस्मृति 1/23

agnivāyurvibhyastu trayaṁ brahma sanātanaṁ /
dudoha yajña siddhyarthamṛgyajuḥ sāmalakṣṇaṁ //

Manuṣmṛti 1/23

यदेतन्मण्डलन्तपति। तन्महदुक्थन्ता ऋचः, स ऋचाँल्लोकोऽथ यदेतदर्च्चिर्द्दीप्यते ... तन्महाब्रतानि तानि सामानि स साम्नाँल्लोकोऽथ य एष एतस्मिन् मण्डले पुरुषः सोऽग्निस्तानि, यजूंषि, स यजुषांल्लोकः।

सैषा त्रय्येवविद्या तपति। तद्धैतदप्यविद्विद्वांस आहुरस्त्रयी वा एषा विद्या तपतीति वाग्घैव तत्पश्यन्ती वदति।

शतपथ ब्राह्मण 10/5/2/1–2

yadetanmaṇḍalantapati / tannmahadukvathantā ṛchaḥ, sa ṛchāmlloko'tha yadetadarcchirddīpyate... tanmahābratāni tāni sāmāni sa sāmnāmlloko'tha ya eṣa etasmin maṇḍale puruṣaḥ so'gnistāni, yajūnṣi, sa yajuṣāmllokaḥ /

saiṣā trayyevavidyā tapati / taddhaitadapyavidvidvāmsa āhurastrayī vā eṣā vidyā tapatīti vāgghaiva tatpaśyantī vadati //

Śatapatha Brāhmaṇa 10/5/2/1-2

प्रजापतिरवा एष वितयते यदि यज्ञः। तैत्तिरीय ब्राह्मण 1/4/6

prajāpatirvā eṣa vitayate yadi yajñaḥ /

Taittirīya Brahmaṇa 1/4/6

सह यज्ञाः प्रजाः सृषृवा पुरोवाच प्रजापतिः।
अनेन प्रसविष्यध्वमेश वोऽस्त्विष्टकामधुक्।। गीता 3/10

sahayajñāḥ prajāḥ sṛṣṭvā purovāca prajāpatiḥ /
anena praviṣyadhvameṣa vo'stivaṣṭakāmadhuk // *Gītā* 3/10

अयं वै प्राणो योऽयं पवते यो वै प्राणः स आयुः सोऽयमेकऽइवैव पवते सोऽयं पुरुषेऽन्तः प्रविष्टो दशधा विहिता।

शतपथ ब्राह्मण 5/2/4/10

ayaṁ vai pāṇo yo'yaṁ pavate yo vai prāṇaḥ sa āyuḥ so'yameka'ivaiva pavate so'yaṁ puruṣe'ntaḥ parviṣṭo daśadhā vihitā / *Śatapatha Brāhmaṇa* 5/2/4/10

अग्निरिन्द्रः सोमः परमेष्ठी प्रजापत्य इति।
(शतपथ ब्राह्मण 11/1/6) ब्रह्मसिद्धांत पृ. 128

agnirindraḥ somaḥ parameṣṭhī prajāpatya iti /
(*Śatapatha Brāhmaṇa* 11/1/6) *Brahamsiddhānta* p. 128

प्राणो वा इदं सर्वम्। ब्रह्मसिद्धांत पृ. 128
prāṇo vā idaṁ sarvaṁ / *Brahmasiddhānta* p. 128

वाग वा इन्द्रः। न ह्युते वहः पवते धम किंचन्।
कौषीतकी ब्राह्मण 2/7

vāg vā indraḥ / na hyute vahaḥ pavate dhama kiñcan /
Kauṣītakī Brāhmaṇa 2/7

WHAT IS MAYA?

माया शब्दो हि आश्चर्यवाची। रामानुज (वेदान्त देशिका)
māyā śabdo hi āścaryavācī / Rāmānuja (*Vedānta Deśikā*)

ऊर्ध्वमूलमधःशाखमश्वत्थं प्राहुरव्ययम्।
छन्दांसि यस्य पर्णानि यस्तं वेद स वेदवित्।। गीता 15/1
ūrghvamūlamadhaḥśākhamaśvatthaṁ prāhuravyayaṁ /
chandānsi yasya parṇāni yastaṁ veda sa vedavit //
Gītā 15/1

गायत्री त्रिष्टुब्जगत्यनुष्टुपङ्क्तया सह।
बृहत्युष्णिहा ककुप्सूचीभिः शम्यन्तु त्वा।। यजुर्वेद 23/33
gāyatrī triṣṭubjagatyanuṣṭupaṅktyā saha /
bṛhatyuṣṇihā kakupsūcībhiḥ śamyantu tvā //
Yajurveda 23/33

षष्ठवाहो विराज उक्षाणो बृहत्या ऋषभः।
ककुभेऽनड्वाहः पङ्क्तयै धेनवोऽतिछन्दसे।। यजुर्वेद 24/13
ṣaṣṭhavāho virāja ukṣāṇo bṛahatyā ṛṣabhaḥ /
kakubhe'naṅgvāhāḥ paṅktyai dhenavo'tichandase //
Yajurveda 24/13

मा छन्दः प्रमा छन्दः प्रतिमा छन्दो अस्रीवयश्छन्दः पंक्तिच्छन्दः उष्णिक् छन्दो बृहती छन्दोऽनुष्टुप् छन्दो विराट् छन्दो गायत्री छन्दास्त्रिष्टुप् छन्दो जगती छन्दः। यजुर्वेद 14/18

mā chandaḥ pramā chandaḥ pratimā chando astrīvayaśchandaḥ paṅkticchandaḥ uṣṇik chando bṛhatī chando'nuṣṭup chando virāṭ chando gāyātrī chandastrīṣṭup chando jagatī chandaḥ // *Yajurveda* 14/18

गायत्र्यां ब्राह्मणं निरवर्तयत्, त्रिष्टुभा राजन्यम्।

ब्रह्मसिद्धांत पृ. 81

gāyatryāṁ brāhmaṇaṁ niravartayat, triṣṭubhā rājanyaṁ /

Brahma Siddhanta p.81.

आश्रयत्व विषयत्व भागिनी निर्विशेष चितिरेव केवला।

ब्रह्मसिद्धांत पृ. 85

āśrayatva viṣayatva bhāginī nirviśeṣa citireva kevalā /

Brahma Siddhanta p.85.

नाहं प्रकाशः सर्वस्य योगमायासमावृतः।
मूढोऽयं नाभिजानाति लोको मामजमव्ययम्।। गीता 7/25

nāhaṁ prakāśaḥ sarvasya yogamāyāsamāvṛtaḥ /
muḍho'yaṁ nābhijānāti loko māmajamavyayaṁ //

Gītā 7/25

भगवानपि ता रात्रीः शरदोत्फुल्लमाल्लिकाः।
वीक्ष्य रन्तुं मनश्चक्रे योगमायामुपाश्रितः।।

श्रीमद्‌भागवद् पुराण 10/29/1

bhagavānapi tā rātrīḥ śaradotphullamāllikāḥ /
vīkṣya rantuṁ manaścakre yogamāyāmupāśritaḥ //

Śrīmadbhāgavad Purāṇa 10/29/1

क्व वा कथं वा कति वा कवेति।
विस्तरयन् कीदृषी योगमायाम्।। रासपंचाध्यायी 5/36

kva vā kathaṁ vā kati vā kaveti /
vistarayan kīdṛśī yogamāyāṁ //

Rāsapañcādhyāyī 5/36

माया च नाम देवस्य शक्तिरव्यतिरेकिनी।
भेदावभास्यस्वातंत्र्यं तथा हि स तया कृतः।।
सा जडा भेदरूपत्वात् कार्यं चास्या जडं यतः।
व्यापिनी विश्वहेतुत्वात् सूक्ष्मा कार्यैककल्पनात्।।

तंत्रालोक 6/116–117

māyā ca nāma devasya śaktiravyatirekinī /
bhedāvabhāsyasvātantrayaṁ tathā hi sa tayā kṛtaḥ //
sā jaḍā bhedarūpatvāt kāryaṁ cāsyā jaḍaṁ yataḥ /
vyāpinī viśvahetutvāt sūkṣmā kāryaikakalpanāt //

Tantrāloka 6/116-117

मोहयति अनेन शक्तिविशेषेण इति वा मोहो मायाशक्तिः।

ईश्वरप्रत्यभिज्ञाविमर्शिनी 1/35

mohayati anena śaktiviśeṣeṇa iti vā moho māyāśaktiḥ /

Iśvarapratyabhijñāvimarśinī 1/35

मायां तु प्रकृतिं विद्यान्मायिनं तु महेश्वरम्।
तस्यावयवभूतैस्तु व्याप्तं सर्वमिदं जगत्।।

श्वेताश्वतरोपनिषद् 4/10

māyāṁ tu prakṛtiṁ vidyānmāyinaṁ tu maheśwaraṁ /
tasyāvayavabhūtaistu vyāptaṁ sarvamidaṁ jagat //

Śvetāśvataropaniṣad 4/10

MATARISHWA: A SUPRAPHYSICAL AIRSTREAM

सोऽभिधाय शरीरात्स्वात्सिसृक्षुर्विविधाः प्रजाः।
अप एव ससर्जादौ तासु बीजमवासृजत्।। मनुस्मृति 1/8

so'bhidhāya śarīrātsvātsisṛkṣurvi vidhāḥ prajāḥ /
apa eva sasarjādau tāsu bījamavāśṛjat // *Manusmṛti* 1/8

एकः सुपर्णः स समुद्रमा विवश स इदं विश्वं भुवनं विचष्टे।
तं पाकेन मनसा पश्यमन्तितस्तं माता रेळ्हि स उ रेळ्हि मातरम् /
ऋग्वेद 10/114/4

ekaḥ suparṇaḥ sa samudramā vivaśa sa idaṁ viśvaṁ bhuvanaṁ vicaṣṭe /
taṁ pākena manasā paśyamantitastaṁ mātā reḷih sa u reḷih mātaraṁ // *Ṛgveda* 10/114/4

रेतः सिग् योगाथ। ब्रह्मसिद्धांत पृ. 133
retaḥ sig yogātha / *Brahmasiddhānta* p.113.

योनेः शरीरम्। ब्रह्मसिद्धांत पृ. 133
yoneḥ śarīraṁ / *Brahmasiddhānta* p.113.

अनेजदेकं मनसो जवीयो नैनद्देवा आप्नुवन् पूर्वमर्षत्।
तद्धावतोऽन्यानत्येति तिष्ठत्तस्मिन्नपो मातरिश्वा दधाति।।
शुक्ल यजुर्वेद 40/4

anejadekaṁ manaso javīyo nainaddevā āpnuvan pūrvamarṣat /
taddhāvato'nyānatyeti tiṣṭhattasminnapo mātariśvā dadhāti //
Śukla Yajurveda 40/4

आपो ह वा इदमग्रे सलिलमेवास।
(शतपथ ब्राह्मण 11/1/6/1) ब्रह्मसिद्धांत पृ. 135

āpo ha vā idamagre salilamevāsa /
(*Śatapatha Brāhmaṇa* 11/1/6/1) *Brahmasiddhānta* p.135.

अन्नमयं हि सोम्य मन आपोमयः प्राणस्तेजोमयी वागिति भूय एव मा भगवान्विज्ञापयत्विति तथा सोम्येति होवाच।। छान्दोग्य 6/5/4

annamayaṁ hi somya mana āpomayaḥ prāṇastejomayī vāgiti bhūya eva mā bhagavānvijñāpayatviti tathā somyeti hovāc // *Chāndogya Upaniṣad* 6/5/4

स एष इह प्रविष्ट अलोमेभ्यः आनखाग्रेभ्यः।
यथा क्षुरः क्षुरधानेऽविहितः स्याद्, विश्वम्भरो वा विश्वम्भरकुलाये।

प्राणन्नेव स प्राणो नाम भवति। वदत् वाक् पश्यं चक्षुः श्रवण श्रोत्रं मन्वनो मनः।
तन्यस्यैतानि कर्मनामन्येव।

(शतपथ ब्राह्मण 14/3/2/18) ब्रह्मसिद्धांत पृ. 137

sa eṣa iha praviṣṭa alomebhyaḥ ānakhāgrebhyaḥ / yathā kṣuraḥ kṣuradhāne'vihitaḥ syād viśambharo vā viśvambharakulāyai / prāṇanneva sa prāṇo nāma bhavati / vadat vāk paśyaṁ cakṣuḥ śravaṇa śrotraṁ manvano manaḥ / tanyasyaitāni karmanāmanyeva /
(*Śatapatha Brāhmaṇa* 14/3/2/18) *Brahma Siddhānta* p. 137

प्राणमपानौ वा इन्द्र अग्नि। मैत्रेयी ब्राह्मण 1/5/6
prāṇamapānau vā indra agni / *Maitreyī Brāhmaṇa* 1/5/6

श्रमादन्यत्र परिवर्तमातस्तिष्ठन्नासीनो यदि वा स्वप्नपि। अहो रात्राभ्यां पुरुषः समेन कतिकृत्वः प्राणेति चापानिति। शतंशतानि पुरुषः समेनाष्टौ शतां यन्मितं तद्वादन्ति। अहोरात्राभ्यां पुरुषः समेन तावत्कृतवः प्राणिति चापानिति।

शतपथ ब्राह्मण 12/1/10/8

śramādanyatra parivartamātastiṣṭhannāsīno yadi vā svapnnapi / aho rātrābhyāṁ puruṣaḥ samena katikṛtvaḥ prāṇeti cāpāniti / śatamśatāni puruṣaḥ samenāṣṭau śatāṁ yanmitaṁ tadvādanti / ahorātrābhyaṁ puruṣaḥ samena tāvatkṛtavaḥ prāṇiti cāpāniti /

Śatapatha Brāhmaṇa 12/1/10/8

तत्र अद्भ्यश्चैनंचन्द्रमसश्च दैवः प्राणः आविशति।

(शतपथ ब्राह्मण 14/3/3/19) ब्रह्मविज्ञान पृ. 137

tatra adbhyaścainamcandramasaśca daivaḥ prāṇaḥ āviśati /
(*Śatapatha Brāhmaṇa* 14/3/3/19) *Brahmavijñāna* p. 137

WHAT HAPPENS TO ATMA AFTER DEATH?

भवद् भूतं भविष्यश्च जङ्गमस्थावरं च यत्।
अस्यैकं सूर्य्यमेवेकं प्रभवं प्रययं विदुः। ब्रह्मविज्ञान पृ. 345

bhavad bhūtaṁ bhaviṣyasca jaṅgamasthāvaraṁ yat /
asyaikaṁ sūryyamevekaṁ prabhavaṁ prayayaṁ viduḥ //

Brahmavijñāna, p. 345

सूर्य प्रसूताग्नि ना तु दृष्टौ पार्थिव मध्यमौ। ब्रह्मविज्ञान पृ. 346

sūrya prasūtāgni nā tu dṛṣṭau pārthiva madhyamo /

Brahmavijñāna, p. 346

बीजान्यग्न्युप दग्धानि न रोहन्ति यथा पुनः।
ज्ञानदग्धैस्तथा क्लेशैर्नात्मा सम्पद्यते पुनः।। ब्रह्मविज्ञान पृ. 368

bījānyagnyupa dagdhāni na rohanti yathā punaḥ /
jñānadagdhaistathā kleśairnātmā sampadyate punaḥ //

Brahmavijñāna, p. 368

यथैधांसि समिद्धोऽग्निर्भस्मसात्कुरुतेऽर्जुन।
ज्ञानाग्निः सर्वकर्माणि भस्मसात्कुरुते तथा।। गीता 4/37

yathaidhānsi samiddho'gnirbhasmasạtkurute'rjuna /
jñānāgniḥ sarvakarmāṇi bhasmātkurute tathā // *Gītā* 4/37

यदा सर्वे प्रमुच्यन्ते कामा येऽस्य हृदि श्रिताः।
अथ मर्त्योऽमृतो भवति अत्र ब्रह्म समश्नुते।। कठोपनिषद् 2/3/14

yadā sarve pramuccyante kāmā ye'sya hṛdi śritāḥ /
atha martyo'mṛto bhavati atra brahma samaśnute //

Kaṭhopaniṣad 2/3/14

कर्मणो ह्यपि बोधव्यं बोधव्यं च विकर्मणः।
अकर्मणश्च बोधव्यं गहना कर्मणो गतिः।। गीता 4/17

karmaṇo hyapi bodhavyaṁ bodhavyaṁ ca vikarmaṇaḥ /
akarmaṇśca bodhavyaṁ gahanā karmaṇo gatiḥ // *Gītā* 4/17

अथ सत्यवतः कायात्, पाशबद्धं वशंगतम्।
अङ्गुष्ठमात्रं पुरुषं, निश्चकर्य यमोवलात्।।

मत्स्य पुराण 208/5/11

atha satyavataḥ kāyāt, pāśabaddhaṁ vaśaṁgataṁ /
aṅguṣṭhamātraṁ puruṣaṁ, niścakarya yamovalāta //

Matsya Purāṇa 208/5/11

मैत्रायणी आरण्यक 6/34/11 *Maitrāyaṇī Āraṇyaka* 6/34/11
cited in THE CONTOURS, COMPOSITION AND SIGNIFICANCE OF AWYAYA

SECTION FOUR

VEDA VIJNANA: APPLICATIONS AND EXPERIMENTS

शतपथ ब्राह्मण 3/5/1–36 (वेदी निर्माण ब्राह्मण)
Śatapatha Brāhmaṇa 3/5/1-36 (Vedī Nirmāṇa Brāhmaṇa)

दश अक्षरा वै विराट्। शतपथ ब्राह्मण 1/1/1/22
daśa akṣrā vai virāṭ / *Śatapatha Brāhmaṇa* 1/1/1/22

न वा एकेनाक्षरेण छन्दांसि वियन्ति न द्वाभ्याम्।

ऐतरेय ब्राह्मण 1/6

na vā ekenākṣareṇa chandānsi viyanti dvābhyāṁ /

Aitareya Brāhmaṇa 1/6

तदेश श्लोको यानि पंचधा त्रीणि त्रीणि तेभ्यो न ज्यायः परमन्यदस्ति।
यस्तद्वेद स वेद सर्वंसर्वा दिशो बलिमस्मै हरन्ति सर्वमस्मीत्युपासीत
तद्व्रतं तद्व्रतम्। छान्दोग्योपनिषद् 2/21/3–4
tadeṣa śloko yāni pañcadhā trīṇi trīṇi tebhyo na jyāyaḥ paramanyadasti /
yastadveda sa veda sarvamsarvā diśo balimasmai haranti sarvamsmītyupāsīta tadvratṁ tadvrataṁ /

Chāndogyopaniṣad 2/21/3-4

स ऐक्षत प्रजापतिः। इमं वा आत्मनः प्रतिमामसृक्षि यत्संवत्सरमिति तस्मादाहुः प्रजापतिः संवत्सर इत्त्यात्मनो ह्येतम्प्रतिमामसृजत यद्वेव चतुरक्षरः संवत्सरश्च्चतुरक्षरः प्रजापतिस्तेनो हैवास्यैष प्रतिमा। ता वा एताः प्रजापतेरधि देवता असृज्ज्यन्ताग्निरिन्द्रः सोमः परमेष्ठी प्रजापत्त्यः।। शतपथ ब्राह्मण 11/1/6/13–14

sa ekṣata prajāpatiḥ / imaṁ vā ātmanaḥ pratimāṁ śṛkṣi yattsamvattsaramiti tasmādāhuḥ prajāpatiḥ samvattsara ittyāttmano hyetampratimāmsṛjata yadveve caturakṣraḥ samvattsaraśccaturakṣraḥ prajāpatisteno haivāsyeṣa pratimā tā vā etāḥ prajāpateradhi devatā asṛjjyantāgnirindraḥ somaḥ parameṣṭhī prajāpattyaḥ //

Śatapatha Brāhmaṇa 11/1/6/13-14

कालो अश्वो वहति सप्तरश्मिः सहस्राक्षो अजरो भूरिरेताः।
तमां रोहन्ति कवयो विपश्चितस्तस्य चक्रा भुवनानि विश्वा
सप्त चक्रान् वहति काल एष सप्तास्य नाभीरमृतं न्वक्षः।।

अथर्ववेद 19/53/1

kālo aśvo vahati saptaraśmiḥ sahastrākṣao ajaro bhūriretāḥ / tamāṁ rohanti kavayo vipaścitastasya cakrā bhuvanāni viśvā sapta cakran vahati kāla eṣa saptāsya nābhiramṛtaṁ nvakṣaḥ // *Atharvaveda* 19/53/1

अश्वो ह वा ऐष भूत्वा देवेभ्यो यज्ञं वहति।

शतपथ ब्राह्मण 1/4/3/3

aśvo ha vā eṣa bhūtva devobhyo yajñaṁ vahati /

Śatapatha Brāhmaṇa 1/4/3/3

अथो आहुः प्रजापतिरेवेमाँल्लोकान् सष्टवा पृथिव्या प्रत्त्यतिष्ठत् तस्मा इमा ओषधयोऽन्नमपच्यन्त तदाश्नात् स गर्भ्यभवत् स ऊर्ध्वेभ्य एव प्राणेभ्यो देवानसृजत येवांचः प्राणास्तेभ्यो मर्त्याः प्रजा इत्यतो यतमथाऽसृजत तथाऽसृजत प्रजापतिस्त्वेवेदं सर्वमसृजत यदिदं किंच। शतपथ ब्राह्मण 6/1/2/11

atho āhuḥ prajāpatirevemāllokān sṛṭvā pṛthivyā prattyatiṣṭhat tasmā imā oṣadhayo'nnamapacyanta tadāśnāt sa garbhyabhavat sa ūrdhvebhya eva prāṇebhyo devānasṛjata yevāñcaḥ prāṇāstebhyo martyāḥ prajā ityato yatamathā'sṛjata tathā'sṛjata prajāpatistvevedaṁ sarvamsṛjata yadidaṁ kinñca /

Śatapatha Brāhmaṇa 6/1/2/11

अग्निरेव देवानां दूत एष सह रक्षा इत्यसु रक्षसा च असुरानाम्।

अध्वर्युनाम (commentary on शतपथ ब्राह्मण Section 3, p. 25)

agnireva devānāṁ dūta eṣa saha rakṣā ityasu rakṣā ca asurānāṁ /

Adhvarunāma, (commentary on *Śatapatha Brāhmaṇa*) Section 3, p. 25.

ऋग्वेद (*Ṛgveda*) 7/63/4 quoted in THE MATERIAL, PHYSICAL AND SUPRAPHYSICAL DOMAINS

चित्रं देवानामुदगादनीकं चक्षुर्मित्रस्य वरुणस्याग्नेः।
आप्रा द्यावापृथिवी अन्तरिक्षं सूर्य आत्मा जगतस्तस्थुषश्च।।

ऋग्वेद 1/115/1

citraṁ devānāmudgādanīkaṁ cakṣurmitrasya varuṇsyāgneḥ /
āprā dyāvāpṛthivi antarikṣaṁ sūrya ātmā jagataststhuṣaśca //

Ṛgveda 1/115/1

यदेतन्मण्डलन्तपति। तन्महदुक्थन्ता ऋचः स ऋचांल्लोकोऽथ यदेतदार्च्चिद् दीप्यते तन्महाव्रतानि तानि सामानि स साम्नांल्लोकोऽथ य एष एतस्मिन् मण्डले पुरुषः सोऽग्निस्तानि यजूंषि स यजुषांल्लोकः।। सैषा त्रयी विद्या तपति तद्धैतदप्यविद्द्वांस आहुस्त्रयी वा एषा विद्या तपतीति वाग्धैव तत्पश्यन्ती वदति।

शतपथ ब्राह्मण 10/5/2/1–2

tadetanmaṇḍalantapati / tanmahadukthantā ṛcaḥ sa ṛcāmlloko'atha yadetadārccid dīpyate tanmahāvratāni tāni

sāmāni sa samnāmlloko'tha ya eṣa etasmin maṇḍale puruṣaḥ so'agnistāni yajūmṣi sa yajuṣāmllokaḥ // saiṣā trayī vidyā tapati taddhaitadapyaviddvāmsa āhustrayī vā eṣā vidyā tapatīti vāghaiva tatpaśpaśyantī vadati //

Śatapatha Brāhmaṇa 10/5/2/1-2

यच्च किंचददर्ष्टि विषयिम अग्निकनैव तत्।

यास्कविरचित निरुक्त दैवतकाण्ड 7/8/3

yacca kiñcadadaṣṭir viṣyima agniknaiva tat /

Yāska's *Nirukta* Daivata Kāṇḍa 7/8/3

सहस्रवर्त्मा सामवेदः। पातंजल महाभाष्य प्रथमाह्निक

sahastravartmā sāmavedaḥ /

Pātañjala Mahābhāṣya Ist Chapter.

साम वै सहस्रवर्त्मनि। षडविंश महाब्राह्मण 1/4

sāma vai sahastravartmani /

Ṣḍavimḥa Mahābrāhmaṇa 1/4

मनुस्मृति (*Manusmṛti*) 1/23 quoted in SEVEN PURUSHAS AND PRAJAPATI

सैषा त्रयी विद्या यज्ञः तस्याः एतच्छिल्पमेष एश वर्णस्तद्यत्कृष्णाजिनं भवति यज्ञस्यैव सर्वत्त्वाय तस्मादद्धयवहननमधिपेषणं भवत्यस्कन्नः हविरसदिति तद्यदेवाऽत्र तण्डुलो वा पिष्टं वा स्कन्दान्तद्यज्ञे यज्ञः प्रतितिष्ठादिति तस्मादद्धयवहननमधिपेषणं भवति।

शतपथ ब्राह्मण 1/1/4/3

saiṣā trayī vidyā yajñaḥ tasyāḥ etacchilpameṣa eṣa varṇstadytkṛṣṇājinaṁ bhavati yajñasyaiva sarvattvāya tasmādaddhyavahananamadhipeṣṇaṁ bhavatyaskannaḥ havirasaditi tadyadevā'tra taṇḍulo vā piṣṭaṁ vā skndāntadyajñe yajñaḥ pratitiṣṭhāditi tasmādaddhyavahananamadhipeṣaṇam bhavati /

Śatapatha Brāhmaṇa 1/1/4/3

यावती वै वेदिस्तावती पृथिवी। वज्रा वै यूपास्तदिमामेवैतत्पृथिवीमेतैर्वज्रै स्पृणुतेऽस्यै सपत्नान्निर्भजति। तस्माद्यूपैकादशिनी भवति द्वादश उपशयो भवति वितष्दृस्तं दक्षिणत उपनिदधाति तद्यद् द्वादश उपशयो भवति।

शतपथ ब्राह्मण 3/7/2/1

yāvatī vai vedistāvatī pṛthvī / vajrā vai yūpāstadimāmevaitattpṛthivimetairvajrai spṛṇute'syai sapattnānnirbhajati / tasmāddyupaikādaśinī bhavati dvādaśa upaśayo bhavati vitaṣdṛstaṁ dakṣiṇata upanidhāti taddyad dvādaśa upaśyo bhavati / *Śatapatha Brāhmaṇa* 3/7/2/1

वेदी निर्माण ब्राह्मण (Vedī Nirmaṇa Brāhmaṇa): For a detailed account on the construction of ritual altars etc., see Ch. 5. Ist Brāhmaṇa 1-36 of शतपथ ब्राह्मण / *Śatapatha Brāhmaṇa.*

तदु हैकेऽन्वाहुः। होता यो विश्ववेदस इति नेदरमित्त्यात्त्मानं ब्रवाणीति तदु तथा न ब्रूयात् मानुषः ह ते यज्ञे कुर्वन्ति व्यृद्धं वै तद्यज्ञस्य यन्मानुषं नेद् व्यृद्धं यज्ञे करवाणीति तस्माद्यथैवर्चाऽनूक्तमेवमेवाऽनुब्रूयाद्धोतारं विश्ववेदसमित्त्येवाऽस्य यज्ञस्य सुक्रतुमित्त्येष हि यज्ञस्य सुक्रतुर्यदाग्निस्तस्मादाहाऽस्य यज्ञस्य सुक्रतुमिति सेयं देवानुपाववर्त्त ततो देवा अभवन्पराऽसुरा भवति ह वा आत्त्मना पराऽस्य सपत्ना भवन्ति यस्यैवं विदुष एतामन्वाहुः।

शतपथ ब्राह्मण 1/4/1/35

tadu haike'nnvāhuḥ / hotā yo viśvavedas iti nedaramittyāttmānaṁ bravāṇīti tadu tathā na bruyāt mānuṣḥ ha te yajñe kurvanti vyṛddhaṁ vai taddyasya yanmānuṣaṁ ned vyṛddhaṁ yajñe karavāṇīti tasmāddyathaivarchā'nūktamevameva'nubrūyāddhotāraṁ viśvavedasamitaivā'sya yajñasysa sakratumityeṣa hi yajñasysa sakraturyadāgnistasmādāhā'sya yajñasysa sakratumiti seyaṁ devānupāvavartta tao devā abhavannparā'surā bhavati ha vā āttmanā parā'sya sapatnā bhavanti yasyaivaṁ viduṣa etāmannvāhuḥ //

Śatapatha Brāhmaṇa 1/4/1/35

शतपथ ब्राह्मण (*Śatapatha Brāhmaṇa*) 1/6/4/5 quoted in THE CONTOURS, COMPOSITON AND SIGNIFICANCE OF AWYAYA

सोमः पूषा च चेततुर्विश्वासा सुक्षितीनाम्। देवत्रा रथ्योर्हिता।।
सामवेद–पूर्वाचिक 2/6/10

somaḥ pūṣā ca cetaturviśvāsā sukṣitīnāma / devatrā rathyorhitā // *Sāmaveda–Pūrvavācika* 2/6/10

इयं पृथ्वी वै पूषा। तैत्तिरीय ब्राह्मण 1/7/2/5
iyaṁ pṛthvī vai pūṣā / *Taittirīya Brāhmaṇa* 1/7/2/5

अथ यत् त्रिंशद विक्रमा पश्चाद् भवति। त्रिंशदक्षरा वै विराट्। विराजा वै देवास्मिल्लोके प्रत्यतिष्ठ स्तथपे एवेष एतद्विराजैवस्मिल्लोके प्रतितिष्ठति। ऐतरेयब्राह्मण – 4/16
atha yat triṁśada vikramā paścād bhavati / triṁśadakṣarā vai virāṭ / virājā vai devāsmilloke pratyatiṣtha stathape eveṣa etadvirājaivasmilloke pratitiṣṭhati /
Aitareya Brāhmaṇa 4/16

अथात आत्मादेश एवात्मैवाधस्तादात्मोपदिष्टादात्मा पश्चादात्मा पुरस्तादात्मा दक्षिणत आत्मोत्तरत आत्मै वेदँसर्वमिति। स वा एष एवं पश्यन्नेवं मन्वान एवं विजानन्नात्मरतिरात्मक्रीड आत्ममिथुन आत्मानन्दः स स्वराड्भवति तस्य सर्वेषु लोकेषु कामचारो भवति अथ येऽन्यथातो विदुरन्यराजानस्ते क्षय्यलोका भवन्ति तेषां सर्वेषु लोकेष्वकामचारो भवति।। छान्दोग्योपनिषद्– 7/25/2
athāta ātmādeśa evātmaivādhastātādātmopadiṣṭātmā paścādātmā dakṣiṇata ātmottarata ātmai vedamsarvamiti / sa vā eṣa evaṁ paśyannevaṁ manvān evaṁ vijānannātmaratirāmakṛḍa ātmamithuna ātmānandaḥ sa svarāḍbhavati tasya sarvasya lokeṣu kāmācāro bhavati atha ye'nyathāto viduranyarājānaste kṣyyalokā bhavanti teṣām sarveṣu lokeṣvakāmacāro bhavati //
Chāndogyopaniṣad 7/25/2

यः कश्च शब्दो वागेव सा। एशा ह्यान्तमायत्तैश हि न प्राणोऽपानो व्यान उदानः समानोऽन इत्त्येतत्त्सर्वं प्राण एवैतन्मयो वा अयमात्मा वाङ्मयो मनोमयः प्राणमयः। शतपथब्राह्मण – 14/4/3/10

yaḥ kaśca śabdo vāgeva sā / eṣā hyāntamāyattaiṣā hi na prāṇo'pāno vyāna udānaḥ samāno'na ittyettsarvaṁ prāṇa evaitannmayo vā ayamātā vāṅgmayo manomayaḥ prāṇamayaḥ // *Śatapatha Brāhmaṇa* 14/4/3/10

आसीदिदं तमोभूतमप्रज्ञातमलक्षणम्।
अप्रतर्क्यमविज्ञेयं प्रसुप्तमिव सर्वतः।। मनुस्मृति– 1/5

āsīdidaṁ tamobhūtamaprajñātalakṣaṇaṁ /
apratarkyamavijñeya prasuptamiva sarvataḥ //
Manusmṛti 1/5

योऽसावतीन्द्रियग्राह्यः सूक्ष्मोऽव्यक्तः सनातनः।
सर्वभूतमयोऽचिन्त्यः स एव स्वयमुद्बभौ।। मनुस्मृति– 1/7

yo'sāvatīndriyagrāhyaḥ sūkṣamo'vyaktaḥ sanātanaḥ /
sarvabhūtamayo'cintyaḥ sa eva svayamudbhavau //
Manusmṛti 1/7

अनन्त वै वेदाः। तैत्तिरीय ब्राह्मण 3/10/11/3

ananta vai vedāḥ / Taittirīya Brāhmaṇa 3/10/11/3

दश ब्रह्माण इत्येते निश्चयंगता।
अध्वर्युनाम (commentary on शतपथ ब्राह्मण p. 27)

daśa brahmāṇa etyete niścayaṅgatā /
Adhvaryunāma (commentary on *Śatapatha Brāhmaṇa*, p. 27)

सूर्य्यो बृहती मध्यूढस्तपति।
अध्वर्युनाम (commentary on शतपथ ब्राह्मण पृ. 44)

sūryyo bṛhatī madhyūḍhastapati /
Adhvaryunāma (commentary on *Śatapatha Brāhmaṇa*, p. 44)

अथ यत्ष्टत्रिंशद्विक्रमा प्राची भवति षट्त्रिंशदक्षरा वै बृहती बृहत्त्या वै देवाः स्वर्ग लोकः समाश्नुवत तथो एवैष एतद्बृहत्त्यैव स्वर्गलोकः समश्नुते सोऽस्य दिव्याहवनीयो भवति। शतपथ ब्राह्मण 3/5/1/9

atha yatṣṭtriṁśadvikramā prācī bhavati ṣaṭtriṁḥadakṣrā vai bṛhatī bṛhatyā vai devāḥ svarga lokaḥ samāśnuvata tatho evaiṣa etadbṛhatyaiva svargamlokaḥ samaśnute so'sya divyāhavanīyo bhavati / *Śatapatha Brāhmaṇa* 3/5/1/9

YAJNYA: THE CREATIVE PROCESS

यज्ञेन यज्ञमयजन्त देवास्तानि धर्माणि प्रथमान्यासन्।
ते हनाकं महिमानः सचन्त यत्रपूर्वे साध्याः सन्ति देवाः।।

यजुर्वेद 1/16

yajñanena yajñamayajanta devastāni dharmāṇi prathamānyāsan /
te hanākaṁ mahimānaḥ sacantaḥ yatrapūrve sādhyaḥ santi devāḥ // *Yajurveda* 1/16

ऋतुरस्मि। आर्तवोऽस्मि। आकाशोद्योनेः संभूतो आपा एतद्रेतः। संवत्सरस्य तेजोभूतस्य भूतस्य भूतस्य भूतस्यात्मा त्वमात्मासि। यस्त्वमसि सोऽहमस्मीति तमाह– कोऽहमस्मीति। सत्यमिति ब्रूयात् किं तद्यत् सत्यमिति यदन्यद् देवेभ्यश्च प्राणेभ्यश्च तत् तत्। अथ यद् देवाश्च प्राणाश्च तत् त्यम् तदेकया वाचाऽभिव्याह्रियते सत्यमिति। एतावदिदं सर्वम्। इदं सर्वमसि। इत्येवैनं तदाऽह तदेतदृक् श्लोकेनाभयुक्तम्।

कौषीतकी उपनिषद् 1/6

ṛturaśmi / ārtavo'smi / ākāśoddyoneḥ sambhūto āpā etadreaḥ / samvatsarasya tejobūtasya bhūtasya bhūtasyātmā tvamātmāsi / yastvamasi so'hamasmīti tamāha-ko'hamasmīti / satyamiti bruyāt kiṁ tadyat satyamiti yadanyad devebhyaśca prānebhyaśca tat tat / atha yad devāśca prāṇāśca tat tyaṁ tadekayā vācā'bhivyāhṛyate

satyamiti / etāvadidaṁ sarvaṁ / idaṁ sarvamasi / ityevainaṁ tadā'h tadetadṛk ślokenābhayuktaṁ /

Kauṣītakī Upaniṣad 1/6

स एष संवत्सरः प्रजापतिः षोडशकलस्तस्य रात्रय एव पंचदश कलाद् ध्रुवैवास्य षोडशकला स रात्रिभिरेवा च पूर्य्यतेऽप च क्षीयते सोऽमावास्यां रात्रिमेतया षोडश्या कलया सर्वमिदं प्राणभृदनुप्रविश्य ततः प्रातर्जायते तस्मादेतां रात्रिं प्राणभृतः प्राणन्न विच्छिन्नद्यादपि कृकलासस्यैतस्या एव देवताया अपचित्यै ।।

शतपथ ब्राह्मण 14/4/3/22

sa eṣa saṁvatsaraḥ prajāpatiḥ ṣoḍaśakalstasya rātraya eva pañcadaśa kalād dhruvaivāsya ṣoḍaśakalā sa rātribhirevā ca pūryyate'pa ca kṣīyate soūmāvasyāṁ rātrimetayā ṣoḍaśyā kalayā sarvamidaṁ prāṇabhṛdanupraviśya tataḥ prātarjāyate tasmādetāṁ rātriṁ prāṇabhṛtaḥ prāṇanna vicchinnadyādapi kṛkalāsasyaitasyā eva devatāyā apacityai //

Śatapatha Brāhmaṇa 14/4/3/22

संवत्सरो यज्ञः प्रजापतिः। शतपथ ब्राह्मण 12/5/1/2

saṁvatsaro yajñaḥ prajāpatiḥ /

Śatapatha Brāhmaṇa 12/5/1/2

तद्यानि तानि भूतानि प्रच्तवस्तेऽध यः स भूतानां पतिः संवत्सरः सोऽथ या सोषाः पत्न्यौषसीसतानीमानि भूतानि च भूतानां च पतिः संवत्सरः उषसि रेतोऽसिंचन्त्स संवत्सरे कुमारोऽजायत सोऽरोदीत्।

शतपथ ब्राह्मण 6/1/3/8

tadyāni tāni bhūtāni practavaste'dha yaḥ sa bhūtānāṁ patiḥ saṁvatsaraḥ so'tha yā soṣāḥ patnyoṣasīsatānīmāni bhūtāni ca bhūtānāṁ ca patiḥ saṁvatsaraḥ uṣasi reto'siñcantsa saṁvatsare kumāro'jāyata so'rodīt //

Śatapatha Brāhmaṇa 6/1/3/8

पुरुषो वै संवत्सरः। तस्य प्राण एव प्रायणीयोऽतिरात्रः प्राणेन हि प्रयन्ति वागेवारम्भणीयमहर्वाचा ह्यारभन्ते। यद्यदारभन्ते।

शतपथ ब्राह्मण 12/2/4/1

puruṣo vai saṁvatsaraḥ / tasya prāṇa eva prāyaṇīyo'tirātraḥ prāṇena hi prayanti vāgevārambhaṇīyamaharvācā hyārambhante / yadyadārambhante /

Śatapatha Brāhmaṇa 12/2/4/1

पुरुषो वै यज्ञः। पुरुषस्तेन यज्ञो यदेनं पुरुषस्तनुतऽएष वै तायमानो यावानेव पुरुषस्तावान् विधीयते तस्मात् पुरुषो यज्ञः।

शतपथ ब्राह्मण– 1/3/2/1

puruṣo vai yajñaḥ / puruṣastena yajño yadenaṁ puruṣastanu'eṣa vai tāyamāno yāvāneva puruṣastāvān vidhīyate tasmāt puruṣo yajñaḥ /

Śatapatha Brāhmaṇa 1/3/2/1

सूयो बृहति (sūryo bṛhati...) quoted in VEDA VIJNANA: APPLICATIONS AND EXPERIMENTS

आकृष्णेन रजसा वर्तमानो निवेषयन्नमृतं मर्त्यंच।
हिरण्येन सविता रथेनादेवो याति भुवनानि पश्यन्।।

यजुर्वेद 33/43

ākṛṣṇena rajasā vartamāno niveśyannamṛtaṁ martyañca /
hiraṇyena savitā rathenādevo yāti bhuvanāni paśyan //

Yajurveda 33/43

नैवोदेता नास्तमेता, मध्ये एकल एव स्थाता।

अध्वर्युनाम (commentary on शतपथ ब्राह्मण section 3)

naivodetā nāstametā, madhye ekala eva sthātā /

Adhvaryunāma (commentary on *Śatapatha Brāhmaṇa*, section 3)

शतपथ ब्राह्मण (*Śatapatha Brāhmaṇa*) 1/6/4/5 quoted in THE CONTOURS, COMPOSITON AND SIGNIFICANCE OF AWYAYA

तैत्तिरीय ब्राह्मण (*Taittirīya Brāhmaṇa*) 1/7/2/5 quoted in VEDA VIJNANA: APPLICATIONS AND EXPERIMENTS

सामवेद पूर्वाचिक (*Sāma Veda*, Pūrvavācika) 2/6/10 quoted in VEDA VIJNANA: APPLICATIONS AND EXPERIMENTS

यज्ञं इंद्रम्रव्यवर्धयत्, यद् भूमि व्यवर्धयत्, चक्रणा ओपवम् दिब्दीः।
yajñaṁ indramravyavardhayat, yad bhūmi vyavardhayat, cakraṇā opavaṁ dibdīḥ /

ऋग्वेद (*Ṛgveda*) 7/63/4 quoted in THE MATERIAL, PHYSICAL AND SUPRAPHYSICAL DOMAINS

सहयज्ञाः प्रजाः सृषृवा पुरोवाच प्रजापतिः।
अनेन प्रसविष्यध्वमेष वोऽस्त्विष्टकामधुक्।। गीता 3/10
sahayajñāḥ prajāḥ śṛṭvā purovāca prajāpatiḥ /
anena prasaviṣyadhvameṣa vo'stivaṣṭakāmadhuk //
Gītā 3/10

SECTION FIVE

VEDA AND KNOWLEDGE

द्वे विद्ये वेदितव्ये इति ह स्म यद्ब्रह्मविदो वदन्ति परा चैवापरा च।
मुण्डकोपनिषद् 1/1/4
dve vidye veditavye iti ha sa sma yadbrahmavido vadanti parā caivāparā ca / *Muṇḍakopaniṣad* 1/1/4

शौनको ह वै महाशालोऽङ्गिरसं विधिवदुपसन्नः पप्रच्छ।
कस्मिन्नु भगवो विज्ञाते सर्वमिदं विज्ञातं भवतीति।।
मुण्डकोपनिषद् 1/1/3
śaunako ha vai mahāśālo'ṅgirasṁ vidhivadupasannaḥ prapaccha /
kasminnu bhagavo vijñāte sarvamidaṁ vijñātaṁ bhvatīti //
Muṇḍakopaniṣad 1/1/3

यत्तदद्रेश्यमग्राह्यमगोत्रमवर्णमचक्षुःश्रोत्रं तदपाणिपादम्।
नित्यं विभुं सर्वगतं सुसूक्ष्मं तदव्ययं यद्भूतयोनिं परिपश्यन्ति धीराः।
मुण्डकोपनिषद् 1/1/6

yattadadreśyamagrāhyamagotramavarṇamacakṣuḥśrotraṁ tadapāṇipādaṁ /
nityaṁ vibhuṁ sarvagataṁ susūkṣamaṁ tadavyayaṁ yadbhūtayoniṁ paripaśyanti dhīrāḥ //
Muṇḍakopaniṣad 1/1/6

VEDA, BRAHMANA AND RISHI

असद्वा इदमग्र आसीत् तदाहुः किं तद्सदासीदित्मृशयो वाडव
तेऽग्रेसदासीत्तदाहुः के त ऋषय इति प्राणा वा ऋषयस्ते
यत्पुराऽस्मात् सर्वस्मादिदमिच्छन्तः श्रमेण तपसाऽरिषँस्तस्मादृषयः।
शतपथ ब्राह्मण – 6/1/1/1

asadvā idamagra āsīt tadāhuḥ kiṁ tadsadāsīditmṛṣyo vāḍava te'gresadāsīttadāhuḥ ke ta ṛṣayaḥ iti prāṇā vā ṛṣayaste yatpurā'smāt sarvasmādidamicchntaḥ śrameṇa tapasā'riṣamstasmādṛṣyaḥ / *Śatapatha Brāhmaṇa* 6/1/1/1

VEDA AND THE MATERIAL SCIENCES

नासतो विद्यते भावो नाभावो विद्यते सतः।
उभयोरपि दृष्टोऽन्तस्त्वनयोस्तत्त्वदर्शिभिः।। गीता 2/16

nāsato vidyate bhāvo nābhāvo vidyate sataḥ /
ubhayorapi dṛṣṭo'ntastvanayostattvadarśibhiḥ // *Gītā* 2/16

यानिनक्षत्राणि दिव्यन्तरिक्षे अप्सुभूमौ यानि नगेषु दिक्षु।
प्रकल्पयंश्चन्द्रमा यान्येति सर्वाणि ममैतानि शिवानि सन्तु।
अथर्ववेद 19/8/1

yāninakṣatrāṇi divyantarikṣe apsubhūmau yāni nageṣu dikṣu / prakalpayamścandramā yānyeti sarvāṇi mamaitāni śivāni santu // *Atharva Veda* 19/8/1

द्वादश प्रध्यश्चक्रमेकं त्रीणि नभ्यानि क उ ताच्चिकेत।
तत्राहतास्त्रीणि शतानि शङ्कवः षष्टिश्च खीला अविचाचला ये।।
अथर्ववेद 10/8/4

dvādaśa pradhyścakramekaṁ trīṇi nabhyāni ka u tācciketa /
tatrāhatāstrīṇi śatāni śaṅkavaḥ ṣaṣṭiśca khīlā avicācalā ye //
Atharva Veda 10/8/4

असंमृष्टो जायसे मात्रोः शुचिर्मन्द्रः कविरुदतिष्ठो विवस्वतः।
घृतेन त्वावर्धयन्नग्न आहुत धूमस्ते केतुरभवद् दिवि श्रितः।।
ऋग्वेद 5/11/3

asammṛṣṭo jāyase mātroḥ śucirmandraḥ kavirudatiṣṭho vivasvataḥ /
ghṛtena tvāvardhyannagna āhuta dhumaste keturabhvad divi śritaḥ // *Ṛgveda* 5/11/ 3

CAUSES AND EFFECTS IN THE UNIVERSE

न तस्य कार्यं करणं च विद्यते।
न तत्समश्चाभ्यधिकश्च दृश्यते।। 1 ।।
परास्य शक्ति विविधैव श्रूयते।
स्वाभाविकी ज्ञान बल क्रिया च।। 2 ।।
तमीश्वराणां परमं महेश्वरम्।
तंदैवतानां परमं दैवतम्।। 3 ।।
स कारणं कारणाधिपाधिपो।
न चास्य कश्चिज्जनिनचाधियः ।। 4 ।। ब्रह्मविज्ञान पृ. 196

na tasya kāryaṁ karanaṁ ca vidyate /
na tatsamaścābhyadhikaśca dṛśyate // 1 //
parāsya śakti vividhaiva śrūyate /
svābhāvikī jñāna bala kriyā ca // 2 //
tamīśvarāṇāṁ paramaṁ maheśvaraṁ /
tadaivatānāṁ paramaṁ daivataṁ //3 //

sa kāraṇaṁ kāraṇādhipādhipo /
na cāsya kaścijjaninacādhiyaḥ // 4 //

Brahmavijñāna p. 196

Gītā 9/18: Quoted in AN ENCOUNTER WITH BRAHMA

SECTION SIX

WHY BHARATAVARSHA AND NOT INDIA?

उत्तरम् यत् समुद्रस्य हिमाद्रिः चैव दक्षिणम् ।
वर्षम् तद् भारत नामः भारतीय यत्र संतति।।

विष्णु पुराण 2/31/22

uttaraṁ yat samudrasya himādriḥ caiva dakṣṇaṁ /
varṣaṁ tad Bhārata nāmaḥ bhāratīya yatra santatiḥ //

Viṣṇu Purāṇa 2/31/22

अग्ने महाँ । असि ब्राह्मण भारतेति। ब्रह्म ह्यग्निस्तस्मादाह
ब्राह्मणेति भारतेत्येष हि देवेभ्यो हव्यं भरति तस्माद्
भरतोऽग्निरित्त्याहुरेष उ वा इमाः प्रजाः प्राणो भूत्वा विभर्त्ति
तस्माद्देवाऽह भारतेति । शतपथ ब्राह्मण – 1/4/2/2

agne mahā̃ / asi brāhmaṇa bhārateti / brahma
hyagnistasmādāha brāhmaṇeti bhāratyeṣa hi devebhyo
havyaṁ bharati tasmād bharato'gnirityāhureṣa u vā imāḥ
prajāḥ prāṇo bhūtvā vibhartti tasmādvevā'ha bhārateti /

Śatapatha Brāhmaṇa 1/4/2/2

तेषां कुरुक्षेत्रन्देवयजनमास ।
तस्मादाहुः कुरुक्षेत्रन्देवानान्देवय जनमिति तस्माद्यत्र क्व च
कुरुक्षेत्रस्य निगच्छति तदेव मन्यत इदन्देवयजनमिति तद्धि
देवानान्देवयजनम् ।। शतपथ ब्राह्मण 14/1/1/2

teṣṁ kurukṣetrandevayajanamāsa /
tasmādāhuḥ kurukṣetrandevānāndevayaḥ janamiti

tasmādyatra kva ca kurukṣetrasya nigacchati tadeva manyata idandevayajanamiti taddhi devānāndevayajanaṁ //

Śatapatha Brāhmaṇa 14/1/1/2

देवा ह वै यज्ञं तन्वानाः । तेऽसुररक्षसेभ्यऽ आसङ्गा। द्विभयांचक्रुस्ते होचुः को नो दक्षिणत आसिष्य तेऽथाऽ भयेऽनाष्ट्रऽउत्तरतो यज्ञमुपचरिष्यामः।

शतपथ ब्राह्मण 4/6/6/1

devā ha vai yajñaṁ tanvānāḥ / te'surarakṣasebhya' āsṅgā / dvibhayāñcakruste hocuḥ ko no dakṣiṇata āsiṣya te'thā' bhaye'nāṣṭra'uttarato yajñamupacariṣyāmaḥ //

Śatapatha Brāhmaṇa 4/6/6/1

APPENDIX TWO

CLASSIFICATION OF INDIAN VERBAL DISCOURSES (*Vāṅgmaya*)

- Śāstra
  - ***Apauruṣeya***
    - (A) ***Śruti-s*** (Mantra + Brāhmaṇa) ***(4)***
      - (I) ***Ṛgveda***
      - (II) ***Yajurveda***
      - (III) ***Sāmaveda***
      - (IV) ***Atharvaveda***

      +

    - ***(B) Upaveda-s (4+1)***
      - (I) Itihāsaveda
      - (II) Dhanurveda
      - (III) Gāndharvaveda
      - (IV) Āyurveda

      +

      - ***(V) Nāṭyaveda***
    - ***(C) Vedāṅga-s (6+1)***
      - (I) Śikṣa (Phonetics)
      - (II) Kalpa (Rituals)
      - (III) Vyākaraṇa (Grammar)
      - (IV) Nirukta (Etymology)
      - (V) Chhanda (Prosody)
      - (VI) Jyotiṣa (Astronomy)

      +

      - (VII) ***Alaṁkāra*** (Poetics)
  - ***Pauruṣeya***
    - ***(I) Purāṇa-s (18)***
      - Parakriyā (One hero) *Rāmāyaṇa*
      - Purākalpa (Multiple heroes) *Mahābhārata*
    - ***(II) Ānvikśikī (6)*** (Six schools of Indian logic)
      - Pūrvapakṣa
        - (i) Jaina
        - (ii) Bauddha
        - (iii) Lokāyata
      - Uttarapakṅa
        - (i) Sāṁkhya
        - (ii) Nyāya
        - (iii) Vaiśeṣika
    - ***(III) Mīmāṁsā (2)***
      - Vidhi (Injunctive statements)
      - Brahmanidarśinī (Philosophical investigations)
- ***Gadya*** ***(Prose)***
- ***Padya*** ***(Poetry)***
- ***Campū*** ***(Mixed)***

*[Sources: **1.** Daṇḍin's **Kāvyādarśa** Ch. 1
2. Rājaūekhara's **Kāvyamīmāṁsā** Ch. 2]*

SECTION EIGHT

ENDNOTES

1 Jacob Needleman, 1988 (first ed. 1975), *A Sense of the Cosmos (The Encounter of Modern Science and Ancient Truth)*, p. xi.
2 *ibid*, p. xii.
3 *mantra brahmanyor vedanamadhyam* — the *pratishakshya* principle quoted by Pandit Motilal Shastri in *Upanishad Vijnana Bhashya Bhoomika*, 1961(second ed.), p. 23.
4 *Brahmana*, a significant portion of the Vedic texts, is not to be confused with one of the four *varnas* in which society was organised in Bharatavarsha. Western scholars use the word 'Brahmin' to differentiate the varna from the text. This is an arbitrary distortion of a word with several layers of meaning, as explained in this work.
5 *aham brahmasmi* — *Brihad Aranayak Upanishad* 1:4:10.
6 The following verses are from the *Nasadeeya Sukta*, which comprises a significant portion of the *Rik Veda*:

> The non-existent was not then,
> Nor was the existent,
> The Earth was not, nor the firmament,
> Nor that which is beyond.
> (When there was nothing, then) what could cover what,
> And where and in whose care did the waters and the bottomless deep then exist?
>
> (*Rik Veda* 10:129:1)

> There was no death nor immortality then;
> There was no sign of night, nor of day.
> That one breathed without extraneous breath with His own nature.
> Other than Him there was nothing beyond.
>
> (*Rik Veda* 10:129:2)

> In the beginning there was darkness,
> Intensified darkness, indistinguishable darkness,

All this visible world was reduced to its primordial
nature.
This primordial world which was enveloped by the
All-pervading power of One,
Before whom the world of matter is a trifle,
became One (that is, came into existence)
Through the force of His intense activity and spiritual
fervour.

In the beginning the Divine Will arose.
This was the first seed of the mind of the Creator.
Those who can see beyond by putting their mind and
heart together
Found the binding link of the existent in the non-
existent,
The non-existent existing in the existent.
(*Rik Veda* 10:129:4)

The rays of the Divine Will spread across the whole
world.
They spread below and above,
And the result was that small and big organisms
bearing seeds were born.
As the existence of Earth was dependent on the Divine
Will of the Creator,
The position of matter was lower than the spirit which
acted with the Divine Will.
(*Rik Veda* 10:129:5)

Who truly knows, and who can declare whence it
cometh
And whither it vanishes?
The divine people who know were born
Much after Creation came into being.
Who then knows whence it has come about?
(*Rik Veda* 10:129:6)

Whence this Creation has come;
Who holds or does not hold;
He who is its surveyor in the highest heaven

He alone knoweth,
And yet doth He know?

(*Rik Veda* 10:129:7).

7 Jacob Needleman, *ibid*, p. 96.

8 René Guénon, 1993, *An Introduction to the Study of the Hindu Doctrines* (translator's Foreword), p. 9.

9 *shantakaram bhujagashayanam padmanabham suresham vishwaharam gagan sadrisham meghavarnam shubhangam lakshmi kantam kamal nayanam yogibhirdhyan gamyam vande vishnum bhava bhaya haram sarva lokaikanatham* — *Vishnu Sahasranama*, Yudhisthira-Bheeshma dialogue, *Mahabharata*.

10 René Guénon, *ibid* (translator's Foreword), p. 12.

11 *ibid*, p. 12.

12 J.A. Dubois, Abbé, 1999 (first ed. 1897), *Hindu Manners, Customs and Ceremonies*, p. 3.

13 *ibid*, p. 4.

14 *ibid*, p. 4.

15 *ibid*, p. 5.

16 *ibid*, p. 11.

17 *ibid*, p. 14.

18 *bhootam bhavad bhavishyachcha, sarvam vedat prasidhyati* — *Manusmriti* 12.

19 The material for this chapter has been drawn from the writings, speeches and presentations of several leading modern scientists, including Murray Gell-Mann, Victor Weisskopf, David Gross, Carl Sagan, T.H. Huxley, Steen Ingermann, Milton K. Munitz, J. Dyson Freeman and J. Trefil. The author wishes to express his gratitude to them.

20 Those interested in the details of the distortion of the *Vedas* may refer to a previous volume by the author, entitled *Before the Beginning and After the End*.

21 René Guénon, 1993, *Introduction to the Study of the Hindu Doctrines*, p. 27.

22 *ibid*, p. 33.

23 Wilhelm Halbfass, 1988, *India and Europe* (second Indian ed. 1990), p. 3.

24 *ibid*, pp. 92-93.

25 *ibid*, p. 135.
26 *ibid*, p. 133.
27 *ibid*, p. 153.
28 *ibid*, p. 151.
29 *ibid*, pp. 151-152.
30 *ibid*, p. 153.
31 René *Guénon*, *ibid*, (translator's Foreword) p. 12.
32 *ibid*, p. 12.
33 *ibid*, p. 12.
34 The author uses the names Bharat and Bharatavarsha for the region between the Himalayas in the north and the Indian Ocean in the south, the Hindukush ranges in the west and Myanmar in the east. To use the name 'India' would be an historical-geographical-civilisational inexactitude in the context of this work.
35 Etymologically darshana means 'to see' or 'vision' — *drishyate anena iti darshanam*.
36 *A Sanskrit-English Dictionary*, 1990, p. 470.
37 *Encyclopaedia Britannica*, 1996, CD-ROM edition.
38 These opinions were gleaned from an exhaustive examination of the relevant sources by Giuseppe Tucci (see his *Linee di Una Storia del Materialismo Indiano*, 1924.)
39 Narayan Champawat, 1955, contribution to *Great Thinkers of the Eastern World*, p. 165.
40 *ibid*, contribution by Christopher Chappel, pp. 167, 168, 170.
41 Rajnish Kumar Mishra, 2000, *Buddhist Theory of Meaning and Literary Analysis*, p. 247.
42 *Vaisheshika Sutra* 5:2:18.
43 *Encyclopaedia Britannica*, 2000, Internet edition.
44 "Samkhya," eminent scholars assert, "is not one of the systems of Indian philosophy. Samkhya is the philosophy of India!" Gopinath Kaviraj, 1987, quoted by Gerald James Larson in Preface to *Encyclopaedia of Indian Philosophies*, 1987, Vol IV, p. xi.
45 *Encyclopaedia of Indian Philosophies*, 1987, Vol. IV "Samkhya", p. 44.
46 A prominent school of philosophers holds that "knowledge about a negative object is gotten through an instrument

which consists in the non-apprehension of any of the standard proofs for the occurrence of the counterpositive of that object. More specifically, we perceive the locus of the absence, and remember the counterpositive; then the internal organs together with this instrument of non-apprehension produce the judgement that "there is no pot here."... The process of non-apprehension, these philosophers say, is not inference." In *Encyclopaedia of Indian Philosophies*, 1997, Vol. III "The Tradition of Nyaya–Vaisesika" by Karl H. Potter, p. 351.

47 The 18 *Puranas* are accounts in verse, and are distinguished by the following five characteristics: universal creation, its dissolution and recreation, elaboration of the different sages and supraphysical energies, the various periods of the several manus (known as the manwantaras), and accounts of the solar and lunar dynasties of the kings and rulers who played an important part in history and the shaping of significant events.

48 Sublation is the mental process of correcting and rectifying errors of judgment. It is important to remember in this context that not all corrections or rectifications constitute sublation. One may believe that a certain hypothesis, say a scientific concept, will work in a certain situation. However, a little later one finds out that it will not. So a correction of the error has occurred. But this is not sublation, because sublation not only requires rejection of an object or the content of one's consciousness, but also that such rectification must occur in light of a new judgment, to which belief is attached and which replaces the initial judgment.

49 In fact, maya is neither illusion nor magical power. For a deeper understanding of the term see the chapter entitled "What is Maya?"

50 For the text of the *Nasadeeya Sukta*, see Appendix One.

51 This principle, harmonising all the doctrines, is discussed in *Brahma Siddhanta* by Pandit Madhusudan Ojha, 1990.

52 This region is currently called Punjab, partly in India and partly in Pakistan.

53 *aneed awatam swadhaya tadekam tasddhanyannah parah minchnasa* — *Brahma Siddhanta*, p. 19.

54 In the *Vedas* the word veerya (or semen) has been used to indicate the creative outflow which is the seed of all creation. The platform or base upon which creation takes place is described as the 'womb'. In all acts of creation these two are essential prerequisites and are considered to be equally important.

55 See chapters "The Contours, Composition and Significance of Awyaya", "Introducing Purusha and Prakriti" and "Seven Purushas and Prajapati" for an explanation of awyaya and purusha.

56 *kim swid vanam ka u sa vriksha asa yato dyawa prithwiranayo prasrishto*
maneeshino manasa prichhatedu tad yadabhyato tishthad bhuvanani dharayan — *Rik Veda* 10:81:4.
Brahma vanam brahma sa vriksha aas yato dyava prithwi nishtatakchuh
maneeshino mana vibravveeni vo brahmadhyatishthad bhuvanani dharayan — *Tatteriya Brahmana* 2:8:9.

57 *kim swidam vanam ka u sa vriksha yato dyava prithwi nishthatachakshuh*
maneeshino manasa prichhtedu tad yadhyatishthad bhuvanani dharyan — *Rik Veda* 10:81:4.

58 *Brahma vanam brahma sa vriksha aas yato dyava prithwi nishthatachakshuh*
maneeshino mana vibraveemi vau brahmadhyatishthad bhuvanani dharayan — *Tatteriya Brahmana* 2:8:6.

59 See the chapter, "The Quest for True Knowledge: Hazards and Challenges".

60 *Brihmanad Brahma*: This is the evolution of the word 'Brahma' from the root brihmana — *Brahma Siddhanta*, Pandit Madhusudan Ojha, 1990, pp. 27-28. The root *bhri* also evolves into Brahma, denoting that which bears and nourishes the entire universe.

61 For a detailed discussion see the section on the first Shankaracharya in the chapter, "The Universe of Darshana."

62 *gatih bharta prabu sakshee niwasah sharanam suhrid*
prabhavah pralayah stahnam nidhanam beejam awyayam
— *Geeta* 9:18.

63 For a detailed explanation of purusha, see the chapters "Introducing Purusha and Prakriti and "Seven Purushas and Prajapati?"

64 *naiwa wacha, na manasa, praptum shakyo na chakshusha*
asti ti brvatonyatra katham taduplabhyate
astee tyewopalabdha vyastattwa bhavena chohayo
astee tyewopalabdhasya tattwabhavah praseedati
— *Katha Upanishad* 6:12-13.

65 *raso wai sah* — *Tatteriya Upanishad* 2:7.
raso hamapsu kaunteya — *Shrimad Bhagwad Geeta* 7:8.

66 *The Concise Oxford Dictionary* (1990, 8th ed.), p. 1309.

67 *chatushtayam wa idam sarvam* — *Kausheetak Shruti*, quoted in *Vijnana Vidyuta* by Pandit Madhusudan Ojha, p. 2.

68 See the chapter "What is Maya?"

69 See the chapter "What is Maya?"

70 See the chapter "Rasa and Bala: The Nature of their Interface".

71 These narratives of ancient times, composed by Veda Vyasa, record history and the Vedic sciences in a popular style. There are 18 principal *Puranas*: *Brahma*, *Brahmanda*, *Brahmavaivarta*, *Markendeya*, *Bhavishya*, *Vamana*, *Vishnu*, *Bhagwat*, *Naradiya*, *Garuda*, *Padma*, *Varaha*, *Shiva*, *Linga*, *Skanda*, *Agni* (or *Wayu*), *Matsya* and *Koorma*.

72 See *Before the Beginning and After the End* by the author for clarification of mana, prana and wak.

73 See the chapter entitled "The *Vedas*: A Prologue" in *Before the Beginning and After the End*.

74 This issue is elaborated in the *Gopatha Brahmana* of *Atharva Veda*.

75 *Brahma wai sarvasya pratishtha* — *Shatpatha Brahmana* 6:1:8.

76 This subject has been explained in the *Vajasaneeya Brahmana* of *Yajur Veda*.

77 These are translated as 'fire', 'wind', 'sun', 'moon' and the 'rain god'. However, as we shall see in the course of our exploration of the *Vedas*, these are a special class of early creations in the process of emergence of the cosmos.

78 See chapters "Who is the 'I'?" and "Jeeva, Ishwara and Parmeshwara" in *Before the Beginning and After the End* by the author.

79 The word 'bhava' is derived from the root *bhoo* which means 'to be', 'existence' or 'being'. It is a state which is not affected by birth/origination and decay. For example, a lump of clay may take many forms. Forms are the matter of construction and destruction but the 'existence' of the clay remains before and after the dissolution of any such forms. Forms are just *vikaras* (modifications) and hence do not cause any effect in the matter or being.

80 A comprehensive branch of knowledge has been developed in the *Vedas* to explain the nature, function and significance of this class of supraphysical energies.

81 The social system in Bharatavarsha classifies individuals into four *varnas* — brahmana, kshatriya, vaishya and shoodra. Modern analysts have decried these varnas as social stratification according to birth. These terms actually reveal a classification based on genetic traits evolving from supraphysical energies. This controversial subject is discussed by the author in his monograph, "The Seer-Scientists and Social Organisation" (to be published).

82 Rasa is translated as "the sap or juice of plants, juice of fruit, any liquid or fluid, the best or the finest part of any thing, essence, marrow" in Sir Monier Monier-Williams' *A Sanskrit–English Dictionary*. However, rasa is used in a technical sense in the *Vedas*.

83 See the chapter "What is Maya?"

84 *mano wa etadyad aparimitam. prajaptirwai manah* — *Kausheetaki Brahmana* 23:6.

85 See the chapter "Veda and the Material Sciences".

86 *na deho na cha jeevatma na indriyani parantapa*
mana ewa manushyanam karana bandha mokshayo — *Vijnana Vidyuta*, Pandit Madhusudan Ojha, p. 32.

87 *A Sanskrit–English Dictionary*, p. 138.

88 *ibid*, p. 138.

89 See the chapter "Who is the 'I'?" in *Before the Beginning and After the End* by the author.

90 *antarasminnime lokah, antar vishwamidam jagat*
brahmiawa bhootanam jeshthamyena ko hihati saprdhitam
Brahman devastrayastrimshad brahmannindra prajapati

Brahman hi vishwa bhootani navo vantah samahita
— *Atharva Veda* 10:7:8.

91 *sahasram wa asmai tatprayachhada-richah, samani, yajunshi tadwa idam kinch traidhatavya* — *Matrayee Samhita* / Fourth *Prapathak* / Third *Kandika*.

92 *indrascha vishnusha itatsahasram adhitishtah* — *ibid*, Fourth *Kandika*.

93 See the chapter "Indra and Vishnu: Two Warring 'Gods'" in *Before the Beginning and After the End*.

94 *jigyathurna parajayathe na parajigye katascha naino*
indrascha vishno yadaspridhetham tredha sahasrma vitadaira yetham
— *Matrayee Samhita*, 1:6:7:7.

95 For an explanation of this 'contest', see the chapter "Indra and Vishnu: Two Warring 'Gods'" in *Before the Beginning and After the End*.

96 *shadaha wai brahmanao dwarah-agni, wayrapashchandrama vidyaut, adityah* — *Shatpatha Brahmana* 11:3:2.

97 *ritmewa parmeshthi, ritam natyeti kinchana*
rite samudra ahita, rite bhoomiriyam shrita — *Tatteriya Brahmana, Kanda* 2.

98 For a detailed discussion of matarishwa, see the chapter entitled "Matarishwa: A Supraphysical Airstream".

99 *tatsuryasya devatwam tanmahitwam, madhyakartovitatam sanjabhar* — *Kutsa Angiras* (quoted by Pandit Madhusudan Ojha in *Vijnana Vidyuta*, p. 40).

100 *urum hi raja varunaschakar suryaya pantha manvetawa U apade paada pratighatave kurutapavaktavidhaschita*
— *Rik Veda* 1:24:8.

101 *yatparabhavamam dasha madhyamam prajapatih sasrije vishwa roopam*
kiyatah skambhah pravivesha tatra yanna pravishat kiyattad babhoova — *Atharva Veda* 10:7:8.

102 *twama agne angirah pratham rishihi* — quoted by Pandit Madhusudan Ojha in *Vijnana Vidyuta*, p. 44.

103 *esha wai somo raja devanam anna yanchandrama* — *ibid*, p. 44.

104 *disro dyawau nihita antarasmin tisro bhoomiruparah shadvidhana gritso raja varuna shchakra etam diwi prenkham hiranmayam shubhekam* — *ibid*, p. 47.

105 *tisro dyawah savitudha upastham eka yamsya bhuvane virashat*
— *ibid*, p. 47.
arni na rathyam abhritadhi tasthuriha braveeti yau taschiketam
— *ibid*, p. 47.

106 *trayo wa ime trivrito. lokah, addha wai yadime lokah.*
anaddha wai tad yadiman lokanati chaturtham. asti wa na va
— *Shatpatha Brahmana*, *ibid*, p. 47.

107 *etada lambanam shreshtham etadalambanam param*
etadalambanam jnyatwa yad ichhati tasya tata — *ibid*, p. 50.

108 *yad aksharam panchvidham sameti yujo yukta abhi yat samvahanti*
satyasya satyamanu uatra yujyate tatra devah sarva ekee bhavanti
— *Aitereya Brahmana* 2:3:8.

109 *hiranmaye pare koshe virajam nishkalam*
tatshubhram jyotisham jyotistad yadatma vido viduh
— *Mundaka Upanishad* 2:2:9

110 *Tatteriya Upanishad* 3:3.

111 *maya tadmidam sarvam jaghdavyakta moortina* — *Geeta* 9:4.

112 *matsthani sarva bhootani na cha aham na teshwasthitah*
— *Geeta* 9:4.

113 *yatha akashasthito nityam vayu sarvatrago mahana*
tatha sarvani bhootani matsthantyupadharaya — *Geeta* 9:6.

114 *yasyantah sthani bhootani yena sarvamidam tatam*
purushah sa parah partha, bhaktya labhyas twnanaya
— *Geeta* 8:22.

115 *dwawimo purusho loke ksharah aksharah eva cha*
ksharah sarva bhootani kootasthoakshar uchyateuttamah
purushastwanyah patmatemyetudahritah
yo loka traya mavishya vibhartawyaya Ishwarah
— *Geeta* 15:15-16.
yasmat ksharm ateetohayam aksharadapi chottamah
atosmi loke vede cha prathitah purushottamah
— *Geeta* 15:18.
awyaktam vyaktimapanam manyante mamabuddhayah
param bhavamajananto mamawyayam anuttamamn
— *Geeta* 7:24.
naham prakashah sarvasya yogamaya samavritah
moodhayam nabhijanati lok mamaajamayayam
— *Geeta* 7:25.

tribhirgunamayambhaviarebhih sarvamidma jagat
mohitam nabhijanati mamebhyah param awayayam
— *Geeta* 7/13

116 *purusham evedam sarvamyad bhootam yachhabhavyam* — quoted by Pandit Madhusudan Ojha in *Vijnana Vidyuta*, p. 75.

117 *na tasya pratimanasti yasya nama mahadyashah*
— *ibid*, p. 77.

118 *ekamewa dwiteeyam Brahma* — *ibid*, p. 77.

119 *brahmano hi pratishthaham amritasya awyayasya cha*
shashwatasya cha dharmasya sukhasyaikantikasya cha
— *Geeta* 14:27.

120 *samvidanti na yamveda vishnurveda na wa vidhih*
yato vacho niwartatente aprapya manasa saha
yasyamatam tasya matam matam yasya na veda sah
avijnatam vijanatam vijnatam avijanatamn
— *Kena Upanishad* 2:3.
naham manye suvedeti no na vedeti veda ch
ano nastad veda tadveda no na vedeti beda cha
— *Kena Upanishad* 2:2

121 *sarvatah pani padam tat sarvatokshi shiro mukhaha*
sarvatah shruti malloke sarvama vritya tishthati
— *Geeta* 13:14.

122 *tasmatparamnaparmasti kinchit tasmannaneeyo na jyayo asti kaschit viksha iva stabdho divi tishthatyekastenedam porrna purushena sarvam* — quoted by Pandit Madhusudan Ojha in *Vijnana Vidyuta*, p. 51.

123 This subject has been dealt with in considerable detail in *Shukla Yajur Veda* and *Krishna Yajur Veda*.

124 According to the rules of euphonic combination in Sanskrit, the 't' sound at the end of 'chitta' becomes a 'd' which is pronounced as the 'th' in 'mother'.

125 For an understanding of the function and relationship of these two supraphysical forces, please read the chapter entitled "Indra and Vishnu: Two Warring 'Gods'" in *Before the Beginning and After the End* by the author.

126 *ashareeram shareerreshu anawastheshwasthitam*
mahantam vibhum atmanam matwa dheero na shochati — quoted by Pandit Madhusudan Ojha in *Vijnana Vidyuta*, p. 55.

127 *mama yonir mahad brahma tasmin garbham dadhamyaham sambhavah sarva bhootanam tato bhavati bharata*
— *Geeta* 14:3.

128 *sarva yonishu kaunteya, morrtaya sambhavanti yah tasam brahma mahad yonir aham beeja prada pitah*
— *Geeta* 14:4.

129 *noonam janah sooryena prassota* — *Rik Veda* 7:63:4.

130 *ysyatmana karayita tam kshetram prachakshate yah karoti tu karmani sa bhootatmochyate budhaih jeeva sangyonatartanyah sahajah sarvja dehinam yenam vedayate sarvam sukhah dukhancha janmasu*
— *Manusmriti* 12:12-13.

131 *koyam atmeti vayamupasmahe, katarah sa atma. yena wa pashyati. yena wa shrinoti.yena wa gandhanajighrati. yena wa wacham vyakaroti. yena wa swadu chaswadu cha vijanati, yadetad hridyama, manasshaitat sajnanam ajnanam prajnanam medha drishiti — sa etena prajnyenatamana asmalloka drutkramyamushmin swarge loke sarvan kaman aptawamritah sambhavat* — *Aitereya Upanishad* 3:1.

132 *adhidaivatam — chakshuh, shrotram mano wak pranah, ta eta panchadevata imama dishtah purusham. panchohaivwata devata ayam vishtah purushah. so atralomabhyah anakehgrebhay sarvahsanga apyate. tasmat sarvani bhootani apipplakabhyah aptyanyewa jayante* — *Aitereya Upanishad* 1:3:6.

133 *sa sha esho anta hridaya akashah, tasminnayam purusho manomayah, amrito hirnamayah. antarena taluke ya esha stana iwalambate se indriyonih. yatrasau keshanto vivartate vyapohya shershakpale. akasha shareeram brahma, satyatmapranaramam mana-anadam, shantim, samridham amritam* — *Tatteriya Upanishad* 1:6:1-2.

134 Shraddha is a ceremony held in honour of dead relatives. It is normally performed at fixed periods; when performed at Gaya, a city in the state of Bihar, it has a special significance. The author's guru has written a detailed treatise on the deeper meaning and significance of this ceremony, entitled *Shraddha Vijnana* ('The Science of Shraddha') — see Bibliography.

135 *Yah pranah saa prajnya ya prajnya sa pranah. sah hyetawasmin shareerre wasatah sahotishthatah tametam ayuramritamityupaswe* — *Kausheetaki Shruti* (quoted by Pandit Madhusudan Ojha in *Vijnana Vidyuta*, p. 64).

136 Please see the chapter "What Happens to Atma after Death?"

137 The five mahabhootas, or basic tattwas, are prithwi (earth), wayu (air), jala (water), teja (sun or fire) and akasha (space).

138 *apama sanghato vilkayanam chatejah samyogat*
— *Maharshi Kanad, Vaisheshik Sutra* 5:2:8.

139 Ambha, mareechi, mar and apa.

140 The school of *vishishta advaita* (distinctive non-duality) follows this concept.

141 For a detailed discussion of this topic, see *Towards Enduring Harmony and Happiness* by the author (work in progress).

142 *Encyclopaedia Britannica*, 1996, CD-ROM edition.

143 Sankhya, Larson & Bhattacharya, 1987, *Encyclopaedia of Indian Philosophies*, Vol. IV, p. 49.

144 *yat karanam awyaktam nityam sada sadatmakam*
— *Manusmriti 1:11.*

145 *purusho wai sahasrasya partima* — *Shatpatha Brahmana* 7:5:2:17. *purudha syati iti purushah* — Madhusudan Ojha, 1990, *Brahma Siddhanta*, v. 172.

146 *navadware pure dehi naiwa kurvanna karayam* — *Geeta* 5:13. Of the nine gates in the body, seven are in the head — two ears, two eyes, two nostrils, one mouth — while the two other 'gates' are the organs of excretion and generation.

147 *pure sthitasya iti purushah* — Madhusudan Ojha, 1990, *Brahma Siddhanta*, v. 173.

148 *pure vasati iti purushah* — *ibid*, v. 174.

149 The word 'pashu' is translated as 'animal' but really connotes 'sense'. The term 'animal sacrifice' in reality stands for overcoming the unbridled impulses propelled by the senses.

150 Akshara *purusha*, who carries the entire cosmos, has been defined and indicated in the shrutis in various ways and by various names. Some of the terms used to indicate akshara are: satya, vijnana, *ananta*, *achyuta*, kootastha, *avyakta*, dhruva, paravara, *setu*, *akshaya* and Ishwara.

151 *sarva bhootani kaunteya prakritim yanti mamikam*
kalpakshaye punastani kalpadi visrijamyaham — *Geeta* 9:7.

152 *Brahma Siddhanta*, V. 204, p. 104.

153 *Visnu Purana* — 1:2:19-20.

154 For a detailed exposition of prakriti, see *Kalatattvakosha* ('A Lexicon of Fundamental Concepts of the Indian Arts'), 1996, Vol. III, chapter entitled "Prakriti", pp.1–47.

155 The Sanskrit word is *shree* which becomes *siir* ('head') in Hindi.

156 *ekaiko wai janyatamindrah* — *Tatteriya Brahmana* 1:4:6.

157 Any creation, whether cosmic, of the human body or of art, starts from five elements: earth, water, fire, air and space. These are conceived of as the building blocks of the universe and of the human body. They constitute the primary and indispensable categories of Reality (the tattwas). A correlation exists between the five bhootas (elements), their subtle forms (sound, touch, form, taste, and smell) and the corresponding sense organs which perceive them.

158 *esha wai prajapatyai esha yajnyastyayate. yasmadimah prajah prajayatah. etamwewapyetahyarnu prajayate* — *Shatpatha Brahmana* 4:2:3:16.

159 *Brahmasya sarvasya prathamajam. Brahmasya sarvasya pratishtheti* — *Shatpatha Brahmana* 6:1:8:10 (here Brahma is indicative of veda).

160 For example, according to *Manusmriti*, *trayam brahma sanatanam* — "the three brahmas are eternal"; and the Brahmana texts speak of *saisha trayee vidya tapati* — "the three vedas are discernible in the sun".

161 *prajapatirwa esha vitayate yad yajnyah*
— *Tatteriya Brahmana* 1:4:6.

162 *saha yajnya praja shrishtwa purovacha prajapatih*
anena prahswishyadhwamesha wostwishta kamadhuk
— *Geeta* 3:10.

163 *ayam wai prano yoyam pavate... yoyam prushentah pravishto dashadha vihitah* — *Shatpatha Brahmana* 5:2:4:10.

164 Yajnya vijnana, or the science of yajnya, is a separate subject deserving elaborate investigation and study.

165 *agnirindrah somah parmeshthi prajapatya iti*
— *Shatpatha Brahmana* 11:1:6.

166 Apa is translated as "waters considered as divinities"
— *A Sanskrit-English Dictionary*, p. 47.

167 *Prano wa idam sarvam* — *Brahma Siddhanta*, p. 128.

168 *wag wa indrah. na hyute wahah pawate dhama kinchana* — *Kausheetaki Brahmana* 2:7.

169 *Dakshinamurtivartika* ('*Encyclopaedia of Indian Philosophies*'), Vol. III, p. 558.

170 *maya shabdo hi aschyaryawachi* — *Ramanuja*.

171 *Dakshinamurtivartika* ('*Encyclopaedia of Indian Philosophies*'), Vol. III, p. 558.

172 Chinmayananda, Swami, 1994, *Commentary on The Bhagwad Geeta*, Chapter 7, p. 53.

173 Monier Monier-Williams, Sir, *A Sanskrit-English Dictionary*, p. 804.

174 *ibid*, p. 804. In Sanskrit, a vowel is written in its original form when it stands alone, but when it follows a consonant an 'a' sign is appended to it. A consonant normally has the short vowel 'a' implicit in it. But it is possible to signify the consonant sound alone without an added vowel by writing a stroke called a *viram* (a 'pause') beneath it.

175 *chhandansi yasya parnani* — *Geeta* 15:1.

176 Chhanda means not only metre but also the *Vedas*, which are metrically composed, as well as the language of the *Vedas*. The language used in ordinary speech, poetry, the *Puranas*, the epics and other writings is Sanskrit. The language of the *Vedas* alone is chhanda. When Panini (the great grammarian) makes a reference to the *Vedas*, he says: "*iti chhandansi...*" — Jagatguru Shankaracharya Chandrashekhar Saraswati, Swami, 1996, *Hindu Dharma* ('The Universal Way of Life'), p. 739.

177 *urdhwamulam adhahshakham ashwatham prahuravyayam*
chhandamsi yasya parnani yastam veda sa vedavit — *Geeta* 15:1.

178 *gayatri trishtup jagati anushtup panktya saha*
brihati ushneeha kukupsuchibhih shamyanhetwa — *Yajur Veda* 23:33.

179 *shasthavaho viraj ukshano brihatya rishabhah*
kukubhenadwahah banktyai dhenavo atichhandasa
— *Yajur Veda* 24:13.

180 *Gayatrya brahmanam nirvartayat, trishtubha rajanyam*
— *Brahma Siddhanta*, p. 81.

181 Generally translated in English as 'death'.

182 In Samkhya philosophy, scholars have also spoken of *shabda tanmatra* (the subtle sound) in the context of the origin of the five mahabhootas.

183 *A Sanskrit-English Dictionary*, p. 838.

184 *ashrayatwa vishayatwa bhagini nirvishesha chitirewa kevala* — *Brahma Siddhanta*, p. 85.

185 *naham prakashah sarvasya yogmaya samavritah*
moodhoyam nabhijanatilok mamajmavyamam — *Geeta* 7:25.

186 Shankaracharya, 1984, *Commentary on the Bhagwad Geeta*, trans. Swami Gambhirananada, p. 335.

187 *bhagwanapi tah ratreeh sharadotphulla mallikah*
veekshyam rantu manash chakre yogama supashritah — *Shrimad Bhagwad Purana* 10:29:1.

188 *kwa wa, katham wa, kati wa, kaveti*
vistarayan kreedasi yagmayam — *Rasapanchadhyayee* v. 36.

189 This view is propounded in Kashmir Shaivism.

190 *Tantraloka* 6:116.

191 *ibid*, 6:116.

192 *ibid*, 6:117.

193 *matyasyam shaktyatmana pralayesarvam jagat srishtau vyakti mayateeti maya* — *Shaiva Darshana*.

194 *mayatu prakritim vidyat mayinam maheshwaram*
tasyavabhootaistu vyaptam sarvamidam jagat
— *Shwetashwatar Upanishad* 4:10.

195 See the chapter, "Rasa and Bala: The Nature of their Interface".

196 See the chapter "Yajnya: Meaning and Significance" in *Before the Beginning and After the End* by the author.

197 *apa eva sansarjadau* — *Manusmriti* 1:8.

198 See the section entitled 'Prana: The Supraphysical Energy' in Chapter Two of *Before the Beginning and After the End* by the author.

199 *ekah suparnah sasamudramavivena sa idam vishwam bhuvanam vichashte*
tam paken manapashyamanshitastam mata redhi sa u redhi mataram — *Rik Veda* 114:4.

200 In *Aitereya Shruti*, wak is described as 'mother' and prana as 'offspring'. But there is no contradiction between the two, because apa evolves from the primal state of wak.

201 Students of medical science and anatomy would know that ovulation occurs in a female when the ballooning ovary wall ruptures and expels the secondary oocyte into the peritoneal cavity. Some women experience a twinge of abdominal pain in the lower abdomen when ovulation occurs. There are always several follicles at different stages of maturation in the ovaries of adult females. As a rule, one follicle outstrips the others and is at the peak stage of maturation when the hormonal stimulus is given for ovulation. Modern science is still uncertain how this follicle is selected or selects itself.

202 *retah sig ygatha* and *yoneh shareeram* — *Brahma Siddhanta*, p. 113.

203 *Anejadakam manaso javeeyo nainddewa apnuvan porrva marshat taddhavato anyanatyaeti toshthat tasminno matarishwa dadhati* — *Yajur Veda* 40:4.

204 These four supraphysical energies are *nabhanedishtha*, *balakhilya*, *vrishakapi* and *revayamarut*.

205 *apa ha wa idam agre salilmewas* — *Shatpatha Brahmana* 11:1:6.

206 *annamayam hi somya manah, apomaya pranah, tejomayee wak* — *Chhandogya Upanishad* 6:5:4.

207 *sa esha iha pravishta alomebhyah aanakehgrebhya. yatha kshurah kshuradhane vahitah syad, vishwambharo wa vishwambharakulaye. Pranannewa sa prano bhavati. vadan wak. pashyam chakshuh. shrinwan shrotram manwano manah. Tanyasaitani karmanamanyewa* — *Shatpatha Brahmana* 14:3:2:18.

208 *prana apanau wa indra agni*— *Maitreyee Brahmana* 1:5:6.

209 *shramadanyatra parivartamanah tishthatinnaseeno yadi wa swapnnap. aho rathrabhyam purushah samena kati krrwah praniti chapaniti. shatam shatani (10,000) purushah samenashtau*

shatam (800) yanmitam tadwadanti. aho ratrabhyam purushah samena tawatkritwah praniti chapaniti
— *Shatpatha Brahmana* 12:1:10:8.

210 *tatra adbhyashchainamchandramasascha daivah prana aveehsati*
— *Shatpatha Brahmana* 14:3:3:19.

211 The *Vedas* mention two moons: a natural satellite of the earth, which revolves around the planet from west to east at a mean distance of approximately 384,400 km; and another, which is located near parmeshthi. Here the reference is to the latter.

212 See "Yajnya: Meaning and Significance" in the author's previous volume, *Before the Beginning and After the End*.

213 The second category is called pitri prana, a supraphysical energy which links up with the ancestors of an individual. This subject is studied separately in a monograph by the author.

214 *na pranena na apanena martyojeevati kaschana itarena tu jeevanti yasmin neta vupashritau* — *Katha Upanishad* 5:5.

215 References to the views on death and the afterlife in Judaism, Christianity, the Quran and modern science are based on the 1995 CD edition of *Encyclopaedia Britannica*, and *Life After Death and Rebirth* by Benjamin Creme (see Bibliography).

216 For an elaboration of this theme, please see the chapter entitled "Who is the 'I'?" in *Before the Beginning and After the End* by the author.

217 *Bhavad bhootam bhavishyascha jangama stathavarom chiyat Asyaikam suryamevaikam prakarma prayam vidut* ("All that has already happened, that is present and will happen, animate or inanimate, has its source and origin in the sun")
— *Brahma Vijnana*, p. 345.

218 *Surya prasot wagni tu dishau prithiva madhyamam* ("The agni of prithwi and the agni of interspace are both born from the sun") — *Brahma Vijnana*, p. 346.

219 These are prana, devata, ritu, chhanda, dik, soma, *prishtha*, *sama*, *graha* and rishi. Each of these is a technical term requiring detailed elaboration.

220 The Sanskrit word for the outcome or ultimate destination of the journey is gati, generally translated as 'destiny'.

221 Etymologically, the word 'narak' evolves thus: *narakam-nrinati kusham prapaati wa.*

222 See the chapter "Jeeva, Ishwara and Parmeshwara" in *Before the Beginning and After the End*.

223 *Beejanyagnyup daghdhani na rohanti yatha punah*
jnana dagdhaistatha kleshairnatmama sampadudyate punah
yathaidhansi samidhognirbhasmasat kruterjuna
jnangnih sarvakarmani bhasmasat krute tatha
yatha sarve pramuchyante kama yesya hridisthitah
atha martyamrito bhavati atha brahma samashnute
— *Brahma Vijnana*, p. 368.

224 See the chapter "Harnessing our Untapped Potential: Retraining Body, Mind and Intellect"' in *Before the Beginning and After the End*.

225 For a detailed exposition of this subject, please see the forthcoming publication, *The Ultimate Dialogue: in the light of Shrimad Bhagwad Geeta* by the author.

226 *karmanohyapi bodhavyam, bodhavyam cha vikarmanah*
akarmanochapi bodhavyam, gahana karmano gatih
— *Geeta* 4:17.

227 The *Puranas*, 18 in number, are collections of historical incidents, legends, narratives explaining and illustrating the scientific knowledge of the *Vedas*, and enunciations of various principles of the science of the cosmos and creation.

228 *atha satyavatah kayat, pashabaddha vashangatam angushthamatram purusham nischakarma yamovalat* — the story of Savitri and Satyavan in *Matsya Purana* 208:5–11 and 211:11–14.

229 *na deho na cha jeeva atma, ne indriyani parantapamana ewa manushaynam karan bandha mokshayo* — *Vijnana Vidyuta*, p. 32.

230 The original text is given in Appendix One.

231 *Dasha akshara vai virat* — quoted by Pandit Motilal Shastri in his commentary to *Shatpatha Brahmana*, *Adhvaryanama* (section 3), p. 7.

232 *na wa ekenaksharena chhandansi viyanti* — *Aitereya Brahmana* 1:1:6.

233 *yani panchadha treeni treeni tebhyo na jyayah paramanyadasti yastadveda sarvam sarva dishi balamasmi haranti*
— *Chhandogya Upanishad* 2:21:3.

234 *sa ekshat prajapati. imam wa atmanah pratimamsrikshi. ta wa etah. prjaptiradhi devata asrijyanta — agni (prithwi), soma (chandrama), indra (soorya), parmeshthi prajapatyah*
— *Shatpatha Brahmana* 11:1:6:13-14.

235 There are three triple worlds. Of these, the first, comprising the earth, the sun and the interspace between these two, is called rodasi ('triple world'). The other two are *krandasi* and *samyati*. This triple world arrangement is explained in the chapter "Veda and the Material Sciences".

236 The sphere of light pervading the region from the sun to the earth is called ashwa, literally meaning 'horse'. *Shatpatha Brahmana* (1:43:30) expresses this in the following mantra: *ashwo ha wa esha bhootwa devebhyo yajnyam vahati* ("All the supraphysical energies ride this horse"). Linear time, with which we are familiar, is caused by the rotation of the earth around the sun. *Atharva Veda* (19:59) describes it as follows: "This horse of time carries the weight of the entire universe on its back. Seven rays radiate from it. It has one thousand eyes. It never becomes aged. It is very strong and powerful. The wise ride this horse as it roams all the worlds in the cosmos."

237 *prajapatirevedam sarvamsrijat yadidam kinch*
— *Shatpatha Brahmana* 6:1:2:11.

238 *agnireva devanam doota asa saharaksha ityasura rakshasama asuranam* — Yajnyavalkya as quoted by Pandit Motilal Shastri in his commentary to *Shatpatha Brahmana*, *Adhvaryanama* (section 3), p. 25.

239 *Jana Swayama Prastat* — *Rik Veda* 7:63:4.

240 *Surya Atma Jagatastasthuschi* — *Rik Veda* 1:115:1.

241 *Yaditanmandalam tapati, tjanmatandukitham. Ta richah. Sa richam lokat*
atha yetadavetardeepyata tanmatravritam sani somani. Sa somanam — *Shatpatha Brahmana* 10:5:2:1-2.

242 *yachcha kinchiddarshti vishyakmagnikarmanivea tata* — *Yaska Nirukta* 7:8:3.

243 This principle is enunciated in the formulations *sahasravartna samvedah* (Sama veda has 1000 circles) — *Patanjali Mahabhashya* 1:7; and *Sam wai Sahasravartanam* — *Savinsha Mahabrahmana* 1:4.

244 *Agniwayuravibhyastra trayam brahma sanatanam dutoh yajnya sidhyartham rik yajuh sama lakshanam* — *Manusmriti* 1:23, and *Saisha trayee Vidya yajnyah* — *Shatpatha Brahmana* 1:1:4:3.

245 *Yavato vai vedistawati prithwi* — *Shatpatha Brahmana* 3:7:2:1.

246 *Vedi nirman Brahmana* (Chapter 5, First *Brahmana* 1–36 of *Shatpatha Brahmana*).

247 *Vyudhan vai tadyajnyasya yanmanushan* — *Shatpatha Brahmana* 1:4:1:25.

248 *Esha vai Soma raja devanamannam yachchadram* — *Shatpatha Brahamana* 1:6:4:5.

249 *Somah poosha eha chetaturvishwaram sukhiteenam* — *Sama Veda* 2:6:10.

250 *iyam prithwi wai poosha* — *Tatteriya Brahmana* 1:7:2:5.

251 *Aitereya Brahmana* 4:16.

252 *atha yat trinshed vikrama paihad bhavati. trinshed akshara uri vivat. viraja wai devaasmin loke pratyatishtham tak, etan virajai wasminloke pratishtat* — *Aitereya Brahmana* 4:16.

253 *atma vedam sarvam* — *Chhandogya Upanishad* 7:25:2.

254 *etanmayo vayamatara wakmayo hanomayaha pranamayah* — *Shatpatha Brahmana* 14:4:3:10.

255 *aseedidam tamobhootamaprajnyatam alaushanam* — *Manusmriti* 1:5.

256 *yosavatiti indriyagrahya sookshna avyaktah sanatana* — *Manusmriti* 1:7.

257 This is expressed in the formulation *ananta vai vedah* ("vedas are innumerable and limitless") — *Tatteriya Brahmana* 3:10:11:3.

258 *dasha brahmanaa ityate purana nischayanganh* — commentary on *Shatpatha Brahmana* by Pandit Motilal Shastri, 1991, p. 27.

259 *suryo brihati madhyoodhastapati* — *ibid*, p. 44.

260 *shahtrinshadakshan wai brihati. brihatya vai devati swarg lokam Samashnuvat. tatho ewaisha etad brihatyaiwa swargam lokam sameshnute. so asya divya ahavanayo bhavati* — *Shatpatha Brahmana* 3:5:1:9.

261 Monier Monier-Williams, Sir, 1990, *A Sanskrit-English Dictionary*, p. 839.

262 *ibid*, p. 839.

263 *Encyclopaedia Britannica*, 1996, CD-ROM edition.

264 *A Sanskrit-English Dictionary*, p. 1249.
265 For a brief introduction to prajapati, see the chapter "Prajapati: The First Individual" in *Before the Beginning and After the End* by the author.
266 *yajnena yajnyamayjanata devastani dharmani prathamanyasan — Yaju Samhita* 1:16.
267 *ritu rasmi, artavosmi. akashdyonaiha sabhooto bharyayai retah samvatsarasya tejo bhooṭasyatmabhootasya twmaatmasi, yastwamasi soahmasmi — Kausheetaki Upanishad* 1:6.
268 *sa esha smavsarah prajapatih shodash kalah — Shatpatha Brahmana* 14:4:3:32.
269 *samvasaro yajnyah prajapatih — Shatpatha Brahmana* 12:5:12.
270 *yah sa bhootanampatih smavasarah sah — Shatpatha Brahmana* 6:1:3.
271 *purusho yajnyah — Shatpatha Brahmana* 1:3:2:1.
272 *purusho wai samvatsarah — Shatpatha Brahmana* 12:2:1.
273 For an introduction to yajnya in the context of the cosmic matrix, please see the chapter "Yajnya: Meaning and Significance" in *Before the Beginning and After the End* by the author.
274 *purusho wai yajnyas purushastena yajnyo vedaina purushastunat esha wai tayamano purushastavan vidheeyate, tasmat purusho yajnyah — Shatpatha Brahmana* 1:3:2:1.
275 Max Müller (ed.), 1993, *Sacred Books of the East*, Vol. 12, "The SataPatha Brahmana", trans. J. Eggeling, Part 1, p. 78.
276 Dorling Kinderseley, 1996, *The Science Encyclopaedia*, p. 76.
277 *ibid*, p. 76.
278 *sooryo brihatimadhyoodhastapati* — quoted by Pandit Motilal Shastri in his commentary to *Shatpatha Brahmana, Adhvaryanama* (section 3), p. 44.
279 *aa krishnena rajasa vartamano niveshannamritam martyancha hirnayanena savita rathen devo yati bhuvanani pashyan — Yaju Samhita* 33:43.
280 *naivodeta nastameta, madhye ekal eva sthata — Chhandogya Upanishad* (quoted by Pandit Motilal Shastri in his commentary to *Shatpatha Brahmana, Adhvaryanama* [section 3]).
281 *esha wai soma raja devanamgna yat chandrama — Shatpatha Brahmana* 1:6:4:5.

282 *iyam wai prithwi poosha* — *Tatteriya Brahmana* 1:7:2:5.

283 *somah possha cha chetaturvishwasam sukhiteenam devatra rathyorhita* — *Sama Veda* 2:2.

284 *yajnyam indramnvardhayat, yad bhoomi vyvartayat chakrana opasham divdi.*

285 *noonam janah suryena prasoota, aynnartha krimvannpansi asya pranadpanativyakhyanmahisho divam* — *Rik Veda* 7:63:4.

286 *vajapyea, rajasooya, chayan, agnishtoma, shodashistoma, gomedha, panhadashah, navaha, abhplava, ishti, chaturmasya* and *dasrhapoornamas* are just a few of the numerous yajnyas which are studied and practised in the Vedic sciences of yajnya.

287 *saha yabjyah praja shrrishtwa purovacha prajapati*
anena prasavishydhwam esha wostitwshtakamadhuk
— *Geeta* 3:10.

288 The word 'upanishad' is derived by adding *upa* (near) and *ni* (with certainty) as prefixes and *kvip* as a suffix to the root *sad*, meaning to split up or destroy.

289 According to Patrick Olivelle, (trans.), 1996, *The World's Classics – Upanisads*, the *Katha Upanishad* "is a challenging text for any translator. It contains several difficult and unique terms whose meanings are far from clear."

290 *The Yama-Nachiketa Dialogue: a detailed commentary* — monograph by the author (publication in progress).

291 See the chapter entitled "Veda and the Material Sciences".

292 For a detailed elaboration of jeeva, see *Before the Beginning and After the End* by the author; most notably the chapter entitled "Jeeva, Ishwara and Parmeshwara".

293 Patrick Olivelle, *ibid*.

294 The meaning and significance of the altar and the fire is explained in the chapter "Veda Vijnana: Applications and Experiments".

295 *Dwe vidye veditavye iti ha sma yad brahmavido vadanti para chaiva apara cha* — *Mundaka Upanishad* 1:4.

296 *Kamsin nu bhagwo vijnate sarvamidamvijnatam bhavateeti* — *Mundaka Upanishad* 1:3.

297 *Yat adresham agrahyam agotram avarnam achakshuh chakshuh shrotramtad panipadam* — *Mundaka Upanishad* 1:6.

298 *asadwa idamagra aseet. tadahuh kim tadsadaseeti? rishayao waw tadagre sadaseet. ke te rishayah? prana wa rishayah. te yat pura asmat satrvasmat idamicchantah shramena tapasa arishan tasmat rishayah* — *Shatpatha Brahmana* 6:1:1:1. (In brief, the seer-scientists explain here that rishi is prana, the supraphysical energy which comes into motion on its own before the cosmos comes into being.)

299 Klaus K. Klostermaier, 1990, *A Survey of Hinduism*, p. 16.

300 *ibid*, p. 23.

301 Ralph Griffith, 1995, *The Hymns of The Rigveda*, p. vii.

302 Klaus K. Klostermaier, *A Survey of Hinduism*, p. 23.

303 Monier Monier-Williams, Sir, 1990, *A Sanskrit-English Dictionary*, p. 1015.

304 *ibid*, p. 741.

305 *ibid*, p. 226.

306 For a fuller analysis of the background and motivation of the distortion of the *Vedas*, see the chapter "The *Vedas*: Distortion and Misrepresentation" in *Before the Beginning and After the End* by the author.

307 The word literally means 'analysis/morphology and syntax' (*vya karoti iti vyakaranam*).

308 *Encyclopaedia Brittanica*, 1996, CD-ROM edition.

309 *ibid.*

310 *ibid.*

311 *ibid.*

312 *ibid.*

313 Jagatguru Shankaracharya Chandrashekhar Saraswati of Kanchikamakotee Peetha, 1996, *Hindu Dharma* ('The Universal Way of Life'), p. 146.

314 *Encyclopaedia Britannica*, 1996, CD-ROM edition.

315 The terma 'bala' is explained in the chapter entitled "Rasa and Bala: The Nature of their Interface".

316 *Na Sato Vidyate bhavo, na bhavo vidyate satah*
Ubhyaorapi drishtanta chaleshayo tattwa darshabhi
— *Geeta* 2:16.

317 The author has drawn material for this section from *The Nakshatras, The Lunar Mansions of Vedic Astrology* by Dennis M. Harness, 2000.

318 *yani nakshatrani divya antariskhe apsu*
bhoomau yani nageshu diskhu
prankalpasynsha chandramamanyeti sarvani
mamaitani shivani santu — *Atharva Veda* 19:8:1.

319 *dwadasha pradhayashchakramekam treeni*
nabhyani ka u tachhiketa
tatrahatastreeni shatani shankavaha
vashtishcha leela avichachala cha — *Atharva Veda* 10:8:4.

320 *asamprishto jayate matroha shuchih*
mandrah kavirudatishtho vivaswataha
dhritena twardhayannan ahuta
dhoomestu keturbhavaddiwi sthitah — *Rik Veda* 5:11:3.

321 For this section the author has relied upon the book *Yoga and Ayurveda, Self-Healing and Self-Realization* by David Frawley, 2000.

322 Please see the chapter on ayurveda in *Before the Beginning and After the End* by the author.

323 V.S. Agrawala, 1988, General Editor's Note in *Vedic Mathematics or Sixteen Simple Mathematical Formulae from the Vedas* by Jagatguru Swami Shri Krishna Tarathji, Shankaracharya of Govardhan Peetha, Puri, p. 6.

324 Swami Pratyagatmananda Saraswati, *ibid*, p. 12.

325 In Sanskrit, the language of the seer-scientists, Ishwara or Parmeshwara (the Supreme Ishwara) is a masculine noun. But Ishwara is not a male, because the seer-scientists and the sages also use the term *Parmeshwari*, which is a feminine noun, for the same phenomenon. The same is true of deva or devata, a term denoting supraphysical energies. The term itself is a masculine noun but the phenomenon is gender neutral. The same phenomenon, when described as *devi*, is then a feminine noun. Similarly, when we discuss the three terms bala, shakti and kriya elsewhere in this work, that which reveals the same power in its latent or dormant state is bala (a masculine word) and in its potent and active state is called shakti or kriya, both of which have the feminine gender. We have chosen to use the gender-neutral 'it' instead of 'he' here for Ishwara and Parmeshwara with due apologies to traditional scholars.

326 *Natapsakarya karanam cha vidyate atatsamaschabhyadhikascha drishyate.*
Parasya shakti vividhaiva shruate Swabhaviki jnan balam krya cha. Tamashwareenam paramam maheshwaramTam daivatanam paramam daivatam.
Na karanamkaranadhipadhapo na achasyakaschijanitaachadhipah
— *Brahma Vijnana*, p.196.

327 Pralaya is translated as "dissolution, reabsorption, destruction, annihilation, death (esp), destruction of the whole world at the end of the kalpa" — *A Sanskrit-English Dictionary*, p. 689.

328 For an explanation of different categories of pralaya, see *Before the Beginning and After the End* by the author, p. 192.

329 *gatih bharta prabhu sakshee niwasah sharanam suhrid*
prabhavah pralayah stahnam nidhanam beejam awyayam
— *Geeta* 9:18.

330 R.N. Saletore, *Encyclopaedia of Indian Culture*, 1984, Vol. IV, p. 1250.

331 *uttaram yat samudrasya himadrih chaiva dakshinam*
varsham tad bharatam nam bharateeya yatra santati
— *Vishnu Purana* 2:31-22.

332 *Bhagwad Purana* 4:4:9; 6:13; 16:9.
Matsya Purana 113:28, 44; 114:11.
Brahmanda Purana 3:53, 14; 56:2; 2:14:62; 17:1; 21:6.

333 *agne maham asi brahmana bharateti* — *Shatpatha Brahmana* 1:4:2:2.

334 *kurukshetram devanam devayajanmasa* — *Shatpatha Brahmana* 14:1:1:2.

335 This entire narrative is connected with sixth *Brahmana* in the sixth chapter of the Fourth *Kanda* of *Shatpatha Brahmana*: *deva ha wai yajnyam tanwanaha Jushtam mitrawarunabhyasamiti.*

336 *ibid.*

337 For the relevant mantras, their literal translation and scientific interpretation, please see *Shatpatha Brahmana* (*Grahayagnama*), Fourth *Kanda*, Second Section, by Pandit Motilal Shastri, 1991, pp. 375–382.

338 The references to archaeological findings are based on research done by Richard H. Meadow of Harvard University's Peabody Museum and Jonathan M. Kenoyer of

the University of Wisconsin at Madison. These two men are co-directors of the Harappa Archaeological Research Project (see: www.harappa.com). They began working together on Harappan archaeology in 1975.

339 *Encyclopaedia Britannica*, 1996, CD-ROM edition.

340 *ibid.*

341 *ibid.*

GLOSSARY

abhawa [*abhāva*]	absence; non-existence.
adesha [*ādeśa*]	instruction.
adhibhautika [*ādhibhautika*]	material.
adhibhoota [*ādhibūta*]	matter.
adhidaivika [*ādhidaivika*]	supraphysical.
adhvaryu [*adhvaryu*]	one of the four classes of learned specialists who guide a *yajnya* (other three being a *hotri, udgatra* and a *ritwij*).
adhyatmika [*ādhyātmika*]	physical (in the sense of comprising both the material and energy components of an individual).
aditya [*āditya*]	sun; one of the numerous supraphysical energies emanating from the sun; one of the many suns referred to in the *Vedas*.
adrishya [*adṛśya*]	invisible; that which cannot be discerned by the senses.
aemoosha [*aimūṣa*]	a supraphysical airstream in which *atma* takes birth as a specific species after the death of the earlier body (also called *aemooosh varaha* when portrayed as a boar).
agastya [*agastya*]	a supraphysical energy; and the seer-scientist who discovers it and is known by that name.
agni [*agni*]	fire; a supraphysical energy.
agni annada [*agni annāda*]	fire in its role as 'consumer' (*anna* being the fuel).

aham [*aham̐*] — in *Shrimad Bhagwad Geeta*, this is indicative of *awyaya*; in popular parlance, the ego; in *darshana*, the self or egoity.

ahargana [*ahargaṇa*] — the distance covered by supraphysical energy as it travels from one location to another, measured by a specified number of days.

ahavaneeya [*āhvānīya*] — a portion of fire taken from the perpetual fire used for the performance of *yajnya*.

ahoratravada [*ahorātravāda*] — a cosmic doctrine prevailing before the *Vedas*, upholding the creation of the universe from the interface of night and day.

ahuti [*āhuti*] — the act of making an offering in fire in a *yajnya*.

akaṛa [*ākara*] — form; structure; shape; configuration; appearance.

akasha [*ākaśa*] — space, one of the five *mahabhootas* (gross elements); space generated by *antariksha* (the separation of heaven and earth), the principal space being a continuous, unbounded extension in every direction.

akshara (purusha) [*akṣara puruṣa*] — see chapter, "The Five Facets of Akshara".

akshara [*akṣara*] — as above.

akshara tattwa [*akṣara tattva*] — as above.

ambha [*ambha*] — one of the four types of supraphysical states of water.

ambhovada [*ambhovāda*]	a cosmic doctrine prevailing before the *Vedas*, upholding the creation of the universe from water.
amrita [*amṛta*]	unchanging; stationary and eternal; popularly translated as nectar.
amrita tattwa [*amṛta tattva*]	the *tattwa* that is unchanging and stationary.
ananda [*ānanda*]	unalloyed joy; pure bliss.
angira [*aṅgirā*]	the supraphysical energy from which *agni*, *wayu* and *aditya* stem.
angira brihaspati [*angirā bṛhaspati*]	a field of supraphysical energy to be found at the conjunction of the solar and *parmeshthi* regions where *vaja*, a specific type of *soma*, is located.
angiras prana [*angirā prāṇa*]	comprises three supraphysical energies and causes the disintegration of solid and hard substances.
anirukta [*anirukta*]	that which cannot be articulated.
anirvachaniya [*anirvacanīya*]	indescribable.
anna [*anna*]	food; something that is consumed (such as fuel in fire).
annada [*annāda*]	that which consumes *anna* (fire in relation to fuel).
antariksha [*antarikṣa*]	the space between heaven and earth; also translated as 'interspace'.
antarloka [*antarloka*]	inner universe; popularly, the heart of a person.
anubhva [*anubhava*]	experience.
anupakhya [*anupākhya*]	that which cannot be elaborated or described.
anushtup [*anuṣṭup*]	a metre consisting of four quarter-verses of eight syllables each.

anuttama [*anuttama*]	unsurpassed.
apa tattwa [*āpa tattva*]	water in the form of supraphysical energy.
apana [*apāna*]	one of the five *pranas* which travels downwards in the body and exits via the anus.
aparavada [*aparavāda*]	one of the 10 cosmic doctrines prevailing before the *Vedas*.
arka [*arka*]	a ray; a flash of lightning; a specific state of the sun; *annada* (consumer) roaming around *pranas*, pulling them forcibly and absorbing them.
arthavada [*arthavāda*]	explanation of the meaning of any precept.
asamavayi [*asamavāyi*]	non-inherent, a classification of cause. According to Annambhatta, a noted logician, a non-inherent cause is "that in which, being in inseparable union with it, the effect is produced — like the yarns are the cause of the effect which is cloth and cloth is the colour on it." (*Tarkasangraha* 26:30).
ashanya [*aśnaya*]	hunger; desire for food; appetite.
asheeti [*aśīti*]	'content' encased within the contours of the circumference, in the nature of rays radiating out from the centre.
ashwa [*aśva*]	a solar supraphysical energy which joins the earth; horse.
ashwamedha yajna [*aśvamedha yajña*]	a specific form of *yajnya*, erroneously presented as a ritual of 'horse sacrifice'.
ashya [*aśya*]	the earlier name for Asia.

asura [*asura*] — generally translated as demons or opponents of the gods; a class of supraphysical energy.

atharva [*atharva*] — one of the four *Vedas*.

atharva prana [*atharva prāṇa*] — a specific class of supraphysical energy.

atimrityu [*atimṛtyu*] — the transformation of the senses into the supraphysical energies, known as 'total death'; the liberation of the supraphysical energies from bondage to the gross material elements.

atma [*ātmā*] — indivisible; unlimited; the all-pervasive and indestructible substratum of every individual, erroneously translated as 'spirit'.

avahneeya agni [*āvāhnīya agni*] — the solar supraphysical energy which travels to the earth during the day and is portrayed as the *agni* of the earth.

avidya [*avidyā*] — ignorance; that which veils the natural potential of Self-realisation.

awarnavada [*āvarnavāda*] — one of the 10 cosmic doctrines prevailing before the *Vedas*.

awyaya (purusha) [*avyaya puruṣa*] — see chapter, "The Contours, Composition and Significance of Awyaya".

bala [*bala*] — the first formation in the process of creation when *rasa*, the vast limitless stillness, is stirred and a unifying principle begins to divide itself into separate and diverse units of supraphysical energy.

baladesha [*balādeśa*] — application of *bala* (force).

beeja [*bīja*] — seed; germ or element; primary cause or principle.

Bharatavarsha [*bhāratavarṣa*]	the region between the Himalayas and the Indian ocean. For further details see chapter, "Why Bharatavarsha and not India?"
bharta [*bhartā*]	one who nourishes or sustains.
bhaswara soma [*bhāswara soma*]	the subtle light.
bhautika [*bhautika*]	material.
bhautika vijnana [*bhautika vijñana*]	material sciences (this term covers all the modern sciences).
bhoota [*bhūta*]	matter.
bhootatma [*bhūta ātmā*]	*atma* related to the grossest state, the body.
bhoota gati [*bhūta gati*]	disintegration of the material elements after death and their submergence in their source. See chapter, "What Happens to Atma after Death?"
bhoota prana [*bhūta prāṇa*]	the supraphysical energy which integrates in a foetus, where it acquires the shape of a body of its own volition.
bhootabhrit [*bhūtabhṛta*]	that which supports the earth, say a mountain; also a name for *Vishnu*.
bhrigu [*bhṛgu*]	a supraphysical energy; and a seer-scientist of that name.
bhu [*bhū*]	earth; also one of the seven *vyahritis*, a term indicating various levels and depth of utterances signifying seven 'worlds'.
bhuvah [*bhuvaḥ*]	atmosphere; see also *bhuvah loka*.
bhuvah loka [*bhuvaḥ loka*]	the second of the seven *vyahritis*, which are deeply meaningful

	utterances signifying the seven 'worlds' of *bhu*, *bhuvah*, *swah*, *maha*, *janah*, *tapah* and *satya*.
bhuvana [*bhuvana*]	a house; signifying earth, the world as a house.
bimba-pratibimbavada [*bimba-pratibimbavāda*]	a cosmic theory propounded by the Shaiva thinkers of Kashmir to resolve the much-debated issue of the cause and effect relationship within the cosmos.
bradhnasya vishtap [*bradhnasya viṣṭap*]	a common property of all *devatas* built for performing *yajnya*; see chapter, "Why Bharatavarsha and not India?"
Brahma [*brahma*]	the foundation or basis of the totality of the created universe. This universe is another manifestation of *Brahma*. See chapter, "An Encounter with Brahma."
brahma loka [*brahma loka*]	the domain of *Brahma*.
brahma veerya [*brahma vīrya*]	one of the four types of *veerya* which determine genetic traits.
brahma vidya [*brahma vidyā*]	the knowledge which facilitates an understanding of *Brahma*.
brahma vijnana [*brahma vijñana*]	the science of creation.
Brahmana [*brāhmaṇa*]	a portion of the texts of the *Vedas* which elucidates the application of *vijnana* (scientific principles).
brahmana [*brahmaṇa*]	one of the four sections in which society was organised (also written as *brahmin*).

brahmananda [*brahmānanda*]	the unalloyed joy on attaining total identity with *Brahma* and achieving complete Self-realisation.
brahmanaspati [*brahmāṇaspati*]	a major division of *soma*, the other being *vritra*.
brahmapura [*brahmapura*]	the abode of *Brahma*.
brihati [*bṛhati*]	the location of the sun in the cosmic matrix.
brihati chhanda [*bṛhati chanda*]	a metre of 36 syllables.
brihman [*bṛhman*]	to expand; to grow.
buddhi [*buddhi*]	intellect; the power of forming and retaining concepts and general notions; intelligence.
chakshu [*cakṣu*]	eye.
Chhandogya [*chāndogya*]	the name of an *Upanishad*.
chandra [*candra*]	moon.
chandrama [*candramā*]	same as *chandra*.
chaya [*chāyā*]	shadow.
chetana (brahma) [*cetanā brahma*]	see chapter, "Seven Purushas and Prajapati".
chhanda [*chanda*]	metre; one of the six branches of the *Vedas*.
chhandas [*chandas*]	another name for *veda*.
chidatma [*cidātmā*]	*chit brahma* functioning as *atma* in relation to an individual.
chit [*cit*]	one of the three dimension of *Brahma*, the other two being *chitya* and *chetana*.
chitya (brahma) [*citya brahma*]	see chapter, "Seven Purushas and Prajapati".
chitya [*citya*]	see chapter, "Seven Purushas and Prajapati".

daharakasha [*daharākaśa*]	the vast space within an individual's body inhabited by *purusha*.
daivavada [*daivavāda*]	the doctrine of supraphysical energies.
daksha [*dakṣa*]	one of the 12 creative *pranas*.
dakshina [*dakṣiṇā*]	a gift offered to the person performing a *yajnya* or any other sacred pursuit.
dakshina agni [*dakṣiṇa agni*]	*vaishwanar agni* located in the south.
darshana [*darśana*]	see chapter, "The Universe of Darshana".
dasha vada [*daśa vāda*]	the 10 cosmic doctrines prevailing before the unifying principle was established by *Prajapati Brahma*.
dashapoornamas yajnya [*daśapūrṇamāsa yajña*]	a specific *yajnya* performed on certain days; of the new and full moon.
dehanta [*dehānta*]	death; when the body becomes lifeless.
deva gati [*deva gati*]	the separation of supraphysical energies from the material component of a body (when death occurs).
deva loka [*deva loka*]	the domain of a class of supraphysical energies.
deva prana [*deva prāṇa*]	a specific class of supraphysical energies, as distinct from *asura* which emerges from the same source.
deva yana[*deva yāna*]	the vehicle of *atma*'s journey when it leaves the body.
devata [*devatā*]	same as *deva prana*.
devatma [*devātmā*]	see chapter, "What Happens to Atma after Death?"
dharma [*dharma*]	one of the five facets of *akshara*, the other four being *veda*, *yajnya*, *praja* and *loka*.

dharmakshetra [*dharmakṣetra*]	area specified for activities consistent with *dharma*.
dhatu [*dhātu*]	ingredient; element; primitive matter.
dhishnya [*dhiṣṇya*]	eight *agni*s or supraphysical energies, emanating from the different *nakshatra*s (planets/stars).
dik [*dik*]	the directions of north, south, east, west etc.
diksoma [*diksoma*]	a subtle supraphysical energy which permeates space.
dishya agni [*diśya agni*]	fire(s) ignited in *yajnya* performed by human beings following the same pattern as *yajnya* in interspace (there are eight *agni*s both here on the earth as well as in interspace).
divya veerya [*divya vīrya*]	one of the four types of *veerya* which determines genetic traits.
drava [*drava*]	liquid.
drishti moola srishti vidya [*dṛṣṭi mūla sṛṣṭi vidyā*]	the science of creation based on visual observation.
dyau [*dyau*]	same as *dyau loka*.
dyau loka [*dau loka*]	the domain of the sun.
gandharva [*gandharva*]	a class of entities; a species different from human beings, generally regarded as celestial musicians or heavenly singers.
gati [*gati*]	motion; speed; outward flow (from the centre towards the circumference, as distinct from the flow from the circumference towards the centre).
gati vidya [*gati vidyā*]	a branch of science dealing with motion.

gau [*gau*] — generally translated as 'cow'; in the technical sense, it is the rays emanating from the sun.

gayatri [*gāyatrī*] — the name of a popular and powerful mantra. Literally translated, it means "that which protects whoever chants it" (*gayantam trayate ysmat gayatri tyabhidhiyate*). According to *Manus-mriti*, each *pada* (quartet) of *gayatri* is taken from one of the *Vedas*. *Gayatri* contains all the spirit and energy of the Vedic *mantra*s.

gayatri chhanda [*gāyatrī chanda*] — a metre consisting of 24 syllables; the first mantra of *Rik Veda* is in *gayatri chhanda*.

gayatri matrika veda [*gāyatrī mātṛka veda*] — the *veda* based on the sun, which is the *vedi* on which it operates.

ghana [*ghana*] — one of the ways of reciting the *Veda Mantras*; any compact mass or substance; solid.

goodhatma [*gūḍhātmā*] — a *purusha* created by the integration of *awyaya*, *akshara* and *kshara*.

graha [*graha*] — planet.

hansatma [*hansātma*] — perishable *wayu*; an airstream which pervades all the gross elements, facilitating the consolidation of a body.

havana [*havana*] — the act of offering oblation to fire in accordance with the principles enunciated in the *Vedas*.

hotra [*hotra*] — *hotri* is one of the four learned scholars who conduct a *yajnya* and recite *Rik Veda*. *Hotra* is the function of *hotri*.

iccha [*icchā*]	desire; impulse; longing.
ida [*īḍā*]	a particular form of *agni*.
idam [*idaṁ*]	here; now; with these words; in this manner.
Indra [*indra*]	the name of a supraphysical energy.
indriya [*indriya*]	organs, which are of two categories: the sense organs and the motor organs.
isha [*īśā*]	master; leader.
Ishwara [*īśvara*]	the supreme principle which regulates the universe, comprising all disparate individuals (*jeeva* regulates individuals and Ishwara regulates *jeevas*).
itihasa [*itihāsa*]	historical episodes illustrating and explaining the supraphysical forces and their functioning.
jagati [*jagatī*]	a vedic metre comprising 48 syllables.
jala [*jala*]	water.
jana [*jana*]	one of the seven *vyahritis*, beyond *maharloka*.
jarayuja [*jarāyuja*]	a gross (as opposed to subtle) body which is born from a womb.
jati [*jāti*]	species, erroneously translated as caste or race.
jeeva [*jīva*]	the supreme principle which regulates an individual, often applied to a living being.
jeevatma [*jīvātmā*]	the *atma* of a living being.
jnana [*jñāna*]	consciousness; knowledge; awareness.
jyotisha [*jyotiṣa*]	astrology; astronomy.
kala [*kāla*]	time.

kala gati [*kāla gati*]	untying of the knot which binds various components in one individual; journey undertaken by *atma*, composed of the five supra-physical energies.
kalpa [*kalpa*]	a measure of time; a specified period; the Vedic auxiliary science dealing with the practical applications, rites and rituals of everyday life.
kamadhenu [*kāmadhenu*]	that which fulfils all aspirations; in popular usage, as in Rishi Vashistha's 'mythical cow' which satisfies all desires; a source of plenty.
kanda [*kāṇḍa*]	a part, portion, section or chapter of a book or work.
karana shareer [*kāraṇa śaīra*]	the causal body.
karma [*karma*]	action; work.
karma gati [*karma gati*]	in accordance with its previous actions.
karmatma [*karmātmā*]	*atma* tied to the consequences of its actions.
Kashyapa [*kaśyapa*]	the name of the seer-scientist who discovered a supraphysical energy bearing that name.
kashyapa prana [*kaśyapa prāṇa*]	a specific supraphysical energy.
koota [*kūṭa*]	immovable.
koothastha [*kūṭastha*]	that which occupies the highest position and is immovable.
krandasi [*krandasī*]	of the three triple worlds comprising the earth, the sun and interspace between these two, one is called *rodasi*

	('triple world'), and the other two are *krandasi* and *samyati*.
kranti vritta [*krānti vṛtta*]	the region 24° north and 24° south of the Equator.
krishna gati [*kṛṣṇa gati*]	downward journey to the domain of demerit.
kriya [*kriyā*]	act of doing; activity.
kshara (purusha) [*kṣara puruṣa*]	proximate cause (*upadana karana*); the *atma* of all modifications.
kshara [*kṣara*]	as above. For a detailed exposition, see chapter, "The Four Limbs of Brahma".
Kurukshetra [*kurukṣetra*]	the field of the *kurus*; an area earmarked for *devatas* to perform *yajnya*.
loka [*loka*]	the world; a field of experience.
madhyama [*madhyamā*]	between the two levels of speech (*vaikharee* and *pashyanti*) there is a middle level known as *madhyama vac* — the level of thought. Its association is chiefly with *buddhi* (the mind or intellect).
mahabhoota [*mahābhūta*]	five basic material elements.
mahadevi [*mahādevī*]	supraphysical energy in a female form.
mahaduktha [*mahaduktha*]	the great centre; a description of *Rik Veda*.
mahah [*mahaḥ*]	one of the seven *vyahritis*.
mahamaya [*mahāmayā*]	see chapter, "What is Maya?"
mahanatma [*mahānātmā*]	the *atma* which causes difference between species.
Maharshi [*maharṣi*]	a great seer-scientist.
mahoktha [*mahoktha*]	same as *mahaduktha*.

mana [*mana*]	one of three components of *atma*, the other two being *prana* and *wak*; also translated as 'mind' or 'heart'.
mantra [*mantra*]	a verse in the *Vedas*; the words in which the seer-scientists articulated their discoveries of the processes of nature, the cosmos and beyond.
matrika veda [*mātṛka veda*]	the *yajnya* created when the solar form of *gayatri matrika veda* flows to the earth and becomes its property.
manu [*manu*]	a lawgiver and philosopher; a time cycle; 14 *manus* are mentioned in the *Puranas*.
manushya loka [*manuṣya loka*]	the world inhabited by human beings.
mar [*mar*]	death.
mareechi [*marīci*]	a particle of light; a shining mote or speck in the air.
marich [*marīca*]	one of the 12 creative *pranas* with regenerative powers identified as operating in our universe. The others are *bhrigu*, *angira*, *atri*, *kratu*, *daksha*, *vashishta*, *agastya*, *pulastya*, *pulah*, *kashyap* and *vishwamitra*.
martya [*martya*]	mortal; changeable.
martya loka [*martya loka*]	the domain of mortal, transitory individuals.
matarishwa [*mātariśvā*]	see chapter, "Matarishwa: a Supra-physical Airstream".
matra [*mātrā*]	a measure of any kind; quantity; size; duration; number; degree; the duration of time required to pronounce a short vowel.

matrika [*mātrka*]	a prosodial instant.
matrika chhanda [*mātrika chanda*]	a metre measured by the number of prosodial instants.
maya [*māyā*]	an extraordinary power which emanates from the infinite and makes possible the interplay of finite phenomena. See the chapter, "What is Maya?" for a full explanation.
maya bala [*māyā bala*]	see chapter, "What is Maya?"
mayee [*māyī*]	that from which *maya* emanates.
mitra [*mitra*]	honour.
moha [*moha*]	infatuation; delusion; distraction.
mrityu [*mṛtyu*]	death; transitoriness.
mulaprakriti [*mūla prakṛti*]	primordial nature; the innate power of transformation and manifestation in the cosmos; the generative principle.
nachitagni [*nacitāgni*]	the *agni* named after *Nachiketa*.
nakshatra [*nakṣatra*]	star; planet; a lunar mansion.
Narada [*nārada*]	one of the seven *rishis*; mentioned often in *Atharva Veda*, a great teacher in the *Ramayana*, the chronicle of the life of *Bhagwan Rama*.
nikhilam [*nikhilaṁ*]	complete; whole; all; entire.
nimitta [*nimitta*]	having a cause or a reason.
nimitta karana [*nimitta kāraṇa*]	incidental cause.
ninda [*nindā*]	censure.
nirpeksha [*nirpekṣa*]	independent; unconcerned; indifferent.
nirukta [*nirukta*]	this term is related to the linguistic analysis of words to derive their correct meaning from a compatible

	verbal root. *Yāskaís Nirukta* emphasises the derivation of difficult and apparently unanalysable terms. Etymology is one of the six auxiliary sciences of the *Vedas*.
nirvachana [*nirvacana*]	interpretation.
nirvishesha (brahma) [*nirviśeṣa brahma*]	see chapter, "The Four Limbs of Brahma".
nishkama [*niṣkāma*]	free from any desires; disinterested.
nitya gati [*nitya gati*]	separation of the components of the body and their amalgamation into the five basic gross elements.
nodana [*nodana*]	see chapter, "Veda and the Material Sciences".
padartha [*padārtha*]	category.
pancha mahabhoota [*pañca mahabhūta*]	five basic material elements (*prithwi*, *jala*, *teja*, *wayu* and *akasha*).
pancha prana [*pañca prāṇa*]	five supraphysical energies: *prana*, *udana*, *apana*, *vyana* and *samana*.
panchagni [*pañcāgni*]	five-dimensional fire.
panchatva [*pañcatva*]	when the five basic elements constituting a body disintegrate and are subsumed in their source, signifying death.
pankti [*paṅkti]*	a metre comprising 40 syllables; a line.
papa loka [*pāpa loka*]	the domain of *papa*; negative tendency; 'sin'.
para (purusha) [*parā puruṣa*]	see chapter, "Introducing Purusha and Prakriti".
para purusha shakti [*parā puruṣa śakti*]	as above.

paravani [*parā vāṇī*]	the transcendental level of speech, experienced in the region of the navel.
paramakasha [*paramākāśa*]	the supreme *akasha*.
parameshthi (prajapati) [*parameṣṭhi prajāpati*]	prajapati, known as *parmeshthi*, which orbits around Brahma and is filled with *apa*.
parmeshthi [*paramaeṣṭhi*]	as above; also one dimension of the five-dimensional universe, the other four being *swayambhoo*, *soorya, chandra* and *prithwi*.
Parmeshwara [*parameśvara*]	the supreme principle in which all *Ishwaras* are subsumed.
Parmeshwari [*parameśvarī*]	*Parmeshwara* manifesting as a feminine power.
paratpara (brahma) [*paratpara brahma*]	see chapter, "The Four Limbs of Brahma".
paratpara [*paratpara*]	as above.
parvata [*parvata*]	a supraphysical energy.
paroraja [*parorājâ*]	the *awyaya* which is the first *prajapati* (also called *maheshwara*).
pashu veerya [*paśu vīrya*]	a specific type of *veerya*.
pashyanti [*paśyantī*]	the inner idea, or *sphota*, is aptly designated as *pashyanti vac*, which is the intuitive flash of understanding of a sentence, book or poem as a whole. *Pashyanti* is the direct experience of the *vakya sphota*, of meaning as a numenal whole.
pavamana [*pavamāna*]	a specific type of *soma*, a supraphysical energy emanating from the moon.
pitri loka [*pitṛ loka*]	the domain of a specific supraphysical energy called *pitara*; also translated as 'world of the ancestors'.

pitara [*pitara*] — translated as 'ancestors' or 'forefathers'. Technically it stands for one of the several unchangeable supraphysical energies (also written as *pitra*).

pitri yana [*pitṛ yāna*] — the vehicle of *atma*'s journey when it leaves the body.

praja [*prajā*] — every created entity.

praja atma [*prajā ātmā*] — the *atma* of the created individual.

prajapati [*prajāpati*] — creator.

prajapati atma [*prajāpati ātmā*] — the *atma* from which all created individuals emanate.

prajnatma [*prajñātmā*] — that which generates impulses.

prajnya [*prajñā*] — one of the three types of *karmatma* permeated with *agni*, the other two being *taijas* and *vaishwanara*.

prakasha [*prakāśa*] — the substratum of manifestation; light; illumination.

prakram [*prakrama*] — a unit of measurement; the distance from one point to another, one *vikram* being equal to two *prakrams*.

prakriti [*prakṛti*] — nature; matter.

prakriya [*prakriyā*] — process; methodology.

prana (pratishtha) [*prāṇa pratiṣtha*] — to vest an individual with a supraphysical energy; to vest an entity with life-force.

prana [*prāṇa*] — supraphysical energy/breath.

prana agni [*prāṇa agni*] — a specific supraphysical energy called *agni*.

pranamaya kosha [*prānḷmaya kośa*] — one of the five sheaths related to *atma*: these are *annamaya kosha*, *pranamaya kosha*, *manomaya kosha*, *vijnanamaya kosha* and *anandamaya kosha*.

Pranamaya kosha is the sheath of supraphysical energy or vital force which sustains life and activates all the senses; it is discernible in the body as breath.

pranee [*prāṇī*] — a living being with *prana*; one who is breathing.

pratibha [*pratibhā*] — to shine upon; to come in sight; a flash (upon thoughts); splendour; an image; intelligence.

prishtha [*pṛṣṭha*] — back; rear; the hind part of an entity; a page.

prithakatva [*pṛthaktva*] — separateness.

prithwi [*pṛthvi*] — the earth.

pulah [*pulaḥ*] — the name of a supraphysical energy and of a seer-scientist.

pulastya [*pulastya*] — as above.

punya [*puṇya*] — actions which earn merit.

pura [*pura*] — see chapter, "The Four Limbs of Brahma"; a city; a fort.

purakalpa [*purā kalpa*] — former times, mainly used to indicate the performance of *yajnya* in olden times; familiarity with the applications of Vedic sciences in olden times.

purana purusha [*purāṇa puruṣa*] — an extremely subtle factor located deep in the inner essence of an individual and permeated with imperishableness.

purna [*pūrṇa*] — complete; whole.

purusha [*puruṣa*] — see chapter, "Introducing Purusha and Prakriti".

purushartha [*puruṣārtha*]	activities undertaken to gain *purusha*.
purushottama [*puruṣottama*]	supreme *purusha*.
raja [*rājā*]	the name given to the collective of the seven *lokas* formed from the three triple worlds; dust particles.
rajovada [*rajovāda*]	one of the 10 pre-*Vedas* cosmic doctrines.
randhra [*randhra*]	hole.
rasa [*rasa*]	juice; fluid; vast, limitless stillness; the best, finest or prime part of anything; essence; marrow; taste.
rashi [*rāśī*]	a sign of the zodiac.
rayi [*rayi*]	matter; a lump of earth; wealth; property; materials.
rishi [*ṛṣi*]	a supraphysical energy which comes into motion spontaneously; a seer-scientist who discovers a specific supraphysical energy.
rishi prana [*ṛṣi prāṇa*]	a supraphysical energy which comes into motion spontaneously at the beginning of creation.
rit [*ṛta*]	that *tattwa*, or portion of a *tattwa*, which has no body and no centre or navel.
ritu [*ṛtu*]	season.
rodasi [*rodasī*]	of the three triple worlds comprising the earth, the sun and interspace between these two, one is called *rodasi* ('triple world'), and the other two are *krandasi* and *samyati*.
roodha [*rūḍa*]	a *tattwa* which is akin to an element, namely that which cannot be broken down into further components.

rudra [*rudra*]	also called *rudradevata*, this supra-physical energy maintains a special relationship with *soma* and *yama*.
sad-asadvada [*sad-asadvāda*]	one of the 10 cosmic doctrines prevailing before the *Vedas*.
sadhana [*sādhana*]	a dedicated effort which leads straight to the goal. In the context of spiritual practice, the term is used for the earnest, dedicated, patient and persistent pursuit of spiritual goals.
sadhya [*sādhya*]	persons engaged in ancient times in study and application of the science of *yajnya*.
sadyaskra yaga [*sadyakṣara yaga*]	*soma* brought for the performance of *yajnya* on the same day.
sama [*sāma*]	the extent to which an individual or an entity can be seen; one of the four *Vedas*.
samadhi [*samādhi*]	intense and prolonged concentration of the mind, leading to total absorption in the Self.
samana [*samāna*]	one of the five *pranas*.
samavayi [*samavāyi*]	inherent (causes).
samhita [*samhitā*]	the *mantra* portion of the *Vedas*.
samparya gati [*samparya gati*]	journeys outside the world.
samshaya [*samśaya*]	doubt.
samshaya tadecchuvada [*samśaya tadecchuvāda*]	one of the 10 cosmic doctrines prevailing before the *Vedas*.
samvatsara [*samvatsara*]	a year; the aggregate of the seasons. *Samvatsara* is *yajnya prajapati*, from whom the triple worlds of earth, inter-space and the solar system are born.

samvatsara agni [*samvatsara agni*]	the supraphysical energy underpinning a *samvatsara*.
sanat [*sanat*]	a supraphysical energy.
sanatana [*sanatāna*]	ever-enduring; eternal.
sandhi [*sandhi*]	the *mantra* portion of the *Vedas*.
sansar gati [*sansāra gati*]	the journey of *bhootatma* related to the category of its outcome in this world.
Sanskrit [*saṁskṛta*]	the classical language of Bharatavarsha.
sanatana dharma [*santāna dharma*]	eternal and ever-enduring way of life.
sanyasi [*sanyāsī*]	a renunciate.
sapeksha [*sāpekṣa*]	relative (in the sense of comparative to another entity).
Saraswati [*sarasvati*]	a vast network of rivers with that name; the goddess of learning.
sarga [*sarga*]	the process of creation.
sat-chit-ananda [*sat-cit-ānanda*]	the integrated principle of existence, consciousness and bliss.
satta [*sattā*]	existence.
sattva [*sattva*]	illumination; enlightening knowledge; lightness (also spelt *satwa*).
satya (loka) [*satya loka*]	the highest level in the discernible matrix.
satya [*satya*]	truth; eternal; unchanging.
savita [*savitā*]	the sun.
shakti [*śakti*]	the supraphysical power and energy which governs the world; the power of *Shiva*; in grammar, it is used to indicate the significative power of words.
shanku [*śaṁku*]	a peg or a post planted in the course of making a *vedi*.
shatpatha [*śatapatha*]	a *Brahmana* text.

shiksha [*śikṣā*]	the first among the six limbs of *Veda*, this science deals with the character of Vedic syllables and determines their true nature; phonetics as applied to the *Vedas*.
shoodra [*śūdra*]	an individual vested with *shoodra prana*.
shoodra veerya [*śūdra vīrya*]	a specific type of *veerya*.
shraddha [*śraddhā*]	faith; trust; conviction. Devoid of all doubt and accompanied by a sentiment of mental calmness, *shraddha* is necessary to enter the path of *yoga* and to maintain oneself on that path.
shrotra [*śrotra*]	organ of hearing; knowledge of the *Vedas*.
shruti parampara [*śruti paramparā*]	the oral tradition of transmitting knowledge.
shukla gati [*śukla gati*]	journey into the luminous domain (after death).
shunya [*śūnya*]	void; zero; emptiness.
siddhantavada [*siddhāntavāda*]	the doctrine of the unified principle (which settled controversies among other cosmic doctrines).
soma [*soma*]	the material cause of the universe; a specific category of supraphysical energy.
sookshma shareer [*sūkṣma śarīra*]	the subtle body (consisting of the five organs of action, the five organs of perception, the five *pranas*, the five basic elements, the discriminative intellect and ignorance, desire and action).

soorya [*sūrya*]	the sun.
srishti moola srishti vidya [*sṛṣṭi mūla sṛṣṭi vidyā*]	the science of creation based on an explanation of the sequence of emergence of various entities comprising the cosmos.
sthiti moola srishti vidya [sthịiti *mūla sṛṣṭi vidyā*]	the science of creation based on an analysis of the cosmic arrangement and the relations of different entities.
sthoola shareer [*sthūla śarīra*]	the gross body (composed of seven ingredients — marrow, bones, fat, flesh, blood, dermis and epidermis, and consisting of legs, thighs, chest, arms, back and head).
stoma [*stoma*]	a 'layer' or 'stack' of supraphysical energy.
stotra [*stotra*]	eulogism; homage to individuals, ideas, concepts, symbols and forces, to supraphysical entities and the human personages representing them.
sukha [*sukha*]	happiness; comfort; (experience) that is in harmony with the Self.
sutratma [*sūtrātmā*]	that which causes the place of *atma* in the body to remain undisturbed.
svara [*svara*]	to shine; bright space; third of the seven *loka*s; third of the three *vyahriti*s; vowel, sound; note.
swadha [*svadhā*]	the energy which causes the first motion.
swah [*svaḥ*]	one of the seven *loka*s (worlds); one of the seven *vyahriti*s.
swarga [*svarga*]	often translated as 'heaven', in the *Vedas* this term is used to denote the sphere of the sun.

swaroop [*swarūpa*]	a specific type of *bala* related to form.
swatantryavada [*svātantryavāda*]	a theory propounded by the Shaiva thinkers of Kashmir to explain the cosmic manifestation. The cosmos emanates from the Absolute Will of Paramashiva.
swayambhoo [*svayambhū*]	that which comes into being on its own. This is the name given to the *yajnya* which occurs at the very outset in the entire process of creation.
syadvada [*syādvāda*]	the theory of indeterminacy or probability; one of the central doctrines of the Jain philosophy.
taijas [*taijas*]	one of the three types of *karmatma*, the other two being *vaishwanara* and *prajnya*.
tama [*tama*]	darkness.
tapa loka [*tapa loka*]	one of the seven *vyahritis*.
tapa shrama [*tapa śrama*]	intense endeavour.
tapah [*tapaḥ*]	one of the seven *vyahriti*s (also written as *tapa*).
tattwa [*tattva]*	essence; the fundamental factor from which something evolves (also written as *tatwa*).
teja [*teja*]	the sun; light; fire; extremely subtle, upward-moving, expansive *prana*.
trishtup [*tṛṣṭup*]	one of the seven *chhandas* in the solar system which demarcate the parameters in which the supraphysical energies are restricted: the other six are *gayatri*, *ushnik*, *anushtup*, *brihati*, *pankti* and *jagati*.

trishtup chhanda [*triṣṭup chanda*]	a metre consisting of 44 syllables.
udana [*udāna*]	one of the five *pranas*, the others being *prana*, *apana*, *vyana* and *samana*.
udgatra [*udgātra*]	one of the four specialised scholars involved in executing a *yajnya*.
uktha [*uktha*]	centre.
upadana karana [*upādāna kāraṇa*]	material cause.
upadhi [*upādhi*]	a substitute; anything which has a mere name or appearance; disguise; a peculiarity; anything defining more closely; title; discriminative appellation; nickname; qualification.
upamana [*upamāna*]	that with which something is compared.
Upanishad [*upaniṣad*]	the last part of a *Veda* (also written as *upanisat*).
usas [*uṣaṣ*]	dawn.
ushnik [*uṣṇīka*]	one of the seven *chhandas* in the solar system, the others being *gayatri*, *anushtup*, *brihati*, *pankti*, *trishtup* and *jagati*.
uttama (purusha) [*uttama puruṣa*]	see chapter, "Introducing Purusha and Prakriti".
uttara [*uttara*]	north.
uttara vedi [*uttara vedī*]	northern *vedi*.
vaikharee [*vaikharī*]	the outer speaking of words and sentences. These are the uttered sounds which combine to make up the sentence, book or poem.
vairajatma [*vairaj ātmā*]	emanating from *Brahma*, this is an aggregation of the 10 identified *rishis*

	(also known as *prajnya* or *prajnanatma*).
vaishwanara [*vaiśvānara*]	one of the three types of *karmatma* permeated with *agni*, the other two being *taijas* and *prajnya*.
vaishwanar agni [*vaiśvānara agni*]	the supraphysical energy which consolidates the components of the 'body'.
varna [*varṇa*]	alphabet; four sections in which society is organised in Bharatavarsha; colour.
varna chhanda [*varṇa chanda*]	a metre specific to a particular *varna*.
varnika [*vārnika*]	a form of metre in which letters are the unit of measurement (and not syllables).
varuna [*varuṇa*]	a supraphysical energy.
varuni [*vāruṇī*]	'the offspring of *varuna*' (see above entry).
vashishtha [*vaśiṣṭha*]	a supraphysical energy and the name of the *rishi* who discovered it.
vashpa [*vāṣpa*]	vapour; gaseous.
vasu [*vasu*]	a supraphysical energy.
vayonadha [*vayonādha*]	that in which several entities are located.
veda [*veda*]	the fundamental *tattwa* which goes into the evolution of the cosmos; the texts which elucidate and explain *veda tattwa*.
veda vijnana [*veda vijñāna*]	the principles enunciated by seer-scientists which explain how *veda* is the fundamental *tattwa* and how that multiplies into the diverse individuals comprising the cosmos.

vedi [*vedī*]	the altar on which *yajnya* is performed, by human beings as well as in the cosmos.
veerya [*vīrya*]	'sperm'; the supraphysical energy indispensable to genes.
vibhajyata [*vibhajyatā*]	disjunction.
vidhi [*vidhi*]	the mantra portion of *Veda*.
vidya [*vidyā*]	branch of knowledge.
vidyuta [*vidyuta*]	electricity; attraction; magnetism.
vijnana [*vijñāna*]	science; knowledge of how the variegated universe evolves from a unified, single harmonious *tattwa*.
vijnanamaya kosha [*vijñānamaya kośa*]	one of the five sheaths related to *atma*: these are *annamaya kosha*, *pranamaya kosha*, *manomaya kosha*, *vijnanamaya kosha* and *anandamaya kosha*. *Vijnanamaya kosha* is the sheath of the supraphysical energy linked to cognition.
vijnanatma [*vijñānātma*]	one of the five forms in which *akshara* manifests itself, the others being *shantatma*, *mahanatma*, *prajnanatma* and *bhootatma*.
vikalpa [*vikalpa*]	alternative.
vikram [*vikrama*]	equal to two *prakrams*.
virat chhanda [*virāt chanda*]	a metre comprising 10 syllables.
Vishnu [*viṣṇu*]	a supraphysical energy.
Vishwamitra [*viśvāmitra*]	a seer-scientist.
vishwad vritta [*viṣvad vṛtta*]	the Equator.
vit veerya [*vit vīrya*]	one of the four types of *veerya*.

vitta [*vitta*] — property; technically the term connotes artificial entities which are not durable and which form a relationship with an individual only temporarily.

viveka [*viveka*] — discriminating intelligence.

vrisha [*vṛṣa*] — the fundamental male principle.

vritra [*vṛtra*] — one of the two principal divisions of *soma*, the other being *brahmanaspati*.

vritta akriti [*vṛtta ākṛti*] — a circular shape.

vyahriti [*vyahṛti*] — one of seven supraphysical stages, seven 'worlds'.

vyakarana [*vyākaraṇa*] — a manner of linguistic analysis which determines the exact form of words; the science of grammar in the *Vedas*.

vyakti [*vyakti*] — an individual.

vyana [*vyāna*] — one of the five *pranas*, the others being *prana*, *udana*, *apana* and *samana*.

vyomavada [*vyoma vāda*] — one of the 10 cosmic doctrines in the pre-Vedic period, upholding the evolution of the cosmos from space.

wak [*vāk*] — the substance in an object; the matter within the shell; speech.

wayu [*vāyu*] — air, one of the five basic gross elements.

yajaman [*yajmāna*] — a person who organises a *yajnya*.

yajna (purusha) [*yajña puruṣa*] — *purusha* as the embodiment of *yajnya* (also called *yajna prajapati* [*yajña prajāpati*]).

yajnya [*yajña*] — the interaction and fusion of supraphysical energies and/or material substances; the process of the acculturation of *agni*; the refinement and embellishment of *agni*.

Yajur [*yajur*]	one of the four *Vedas*.
yakshatma [*yakṣātmā*]	a specific *bala* which gives rise to changes and modifications in *Brahma* (also called *abhwa*).
yama [*yama*]	generally understood as the 'god of death'.
yaugika [*yaugika*]	a compound.
yoga [*yoga*]	a discipline. A classical form of *yoga* is set forth in the *Yoga Sutras* of *Patanjali*. This consists of seven stages of discipline, beginning with the performance of righteous acts, going on to breath control and the resultant control of the mind (and concurrent control of the body), and culminating in a state called *samadhi*, which is divided into a lower and a higher state. The lower type is the mystic's trance and the higher is liberation itself — the difference being that once one gains the higher state, one never loses it.
yoga roodha [*yoga rūḍha*]	a compound which develops traits that are different from those of its constituents.
yogamaya [*yoga māyā*]	see chapter, "What is Maya?"

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Kenopanishad
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ABOUT THE AUTHOR

The author of this work, R.K. Mishra, was 'discovered' by his guru, the outstanding scholar Pandit Motilal Shastri. Unlike the normal practice of a student seeking out a learned teacher, in this case the teacher located the student, shook him internally, elevated him above the world in which he was immersed, gave him insights into the 'lost' meaning of the messages hidden in these age-old texts, and taught him how to decipher the profound implications of the *Veda Mantras*, the eternal verses.

Having sown the seeds of a powerful cosmic view, Pandit Motilal Shastri asked his disciple to return to the world in which he was immersed, to internalise what he had learned and then communicate it to the world. This was the most difficult task: to continue the process of learning, testing, verifying and deepening the knowledge without withdrawing from the demanding responsibilities and challenges of normal existence. This book, and its predecessor (*Before the Beginning and After the End*) are the result of more than 30 years of that rigorous process.

During this long period, the author worked as a journalist and rose to become Editor-in-Chief of India's only left-wing daily, *The Patriot*, and the weekly news-magazine *Link*. He also experienced the complexities of life and society as a trade unionist and social activist. He was elected as a Member of the Indian Parliament (Upper House) between 1974 and 1980, when he watched closely the functioning of the world's largest democracy. He worked alongside the late prime ministers

(Mrs) Indira Gandhi and Rajiv Gandhi. In 1990 he became Chairman and Editor-in-Chief of the Observer Group of Newspapers, which includes a prominent financial daily, *The Observer of Business and Politics*, published simultaneously from Mumbai and Delhi.

The author has travelled widely, both as a parliamentarian and as a journalist. He has visited France, Greece, UK, USA, Germany, Russia, Egypt, Algeria, Tanzania, Zambia, Angola, Vietnam, Kampuchea, Lebanon, Pakistan, Italy, Switzerland, Cuba, Portugal, Poland, Thailand and China, among others. During these visits he has met with presidents, prime ministers, ministers, academics, intellectuals and other leading public figures.

Throughout this time, while apparently immersed in politics and journalism, he continued his internal pilgrimage of self-discovery, a journey completely hidden from his interlocutors in the world of politics, media and public affairs. He continued to live in a tantalising 'external' world while internally being occupied with his 'real' assignment.

In the year 2000, the author's first volume, *Before the Beginning and After the End*, was published by Rupa & Co., Delhi, in association with Brahma Vidya Kendra. The latter is an institute which the author has established as a Trust in order to foster study into the origins and nature of the universe.

Like his guru, the author belongs to the lineage of Rishi Bharadwaj, the renowned seer-scientist who unravelled several mysteries of the cosmos many thousands of years ago and is extensively cited in the *Vedas*.

INDEX

This work presents the view of the cosmos as enunciated by the *rishis*, or seer-scientists, several millennia ago and articulated in the *Vedas*. Its content concerns the subtlety, complexity, continuity and fluidity of the cosmos. The 'indescribable' phenomena of the cosmos can best be captured as a matrix, hence the title *The Cosmic Matrix*. This work does not deal with cosmology, neither in terms of the speculations of modern science nor of mythology and fable, but rather it presents a coherent, internally consistent view of the cosmos.

"Every generation traverses its own path to discern the ultimate truth about the universe, and every generation thinks it has found the definitive answers. But there is no finality. The search for the truth about the cosmos continues. *The Cosmic Matrix* resumes that search in the light of the *Vedas* after a lapse of several millennia."
(from the chapter, "Why 'Cosmic Matrix'?")

The Cosmic Matrix is an expression of the author's life-long quest and mission to unearth the ancient study of the greatest mystery of all — the secrets of existence and of our universe. *The Cosmic Matrix* allows us to penetrate those secrets a little more deeply and to explore the ways in which the *rishis* discovered cosmic principles and validated them through rigorous experimentation.

The Ultimate Dialogue: in the light of Shrimad Bhagwad Geeta, the author's forthcoming volume, deepens the exploration. While scholars of the *Geeta* have focused their attention on the paths of *jnana yoga* (the path of knowledge), *bhakti yoga* (the path of devotion) and *karma yoga* (the path of action), this book presents its readers with the additional — one might say, the 'ultimate' — dimension of life in the universe as a fusion of awareness, action and intelligence. This profound and practical perspective found in the verses of the *Geeta* has been ignored and overlooked for far too long, and has the potential to be of great benefit to our universe and its inhabitants.

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